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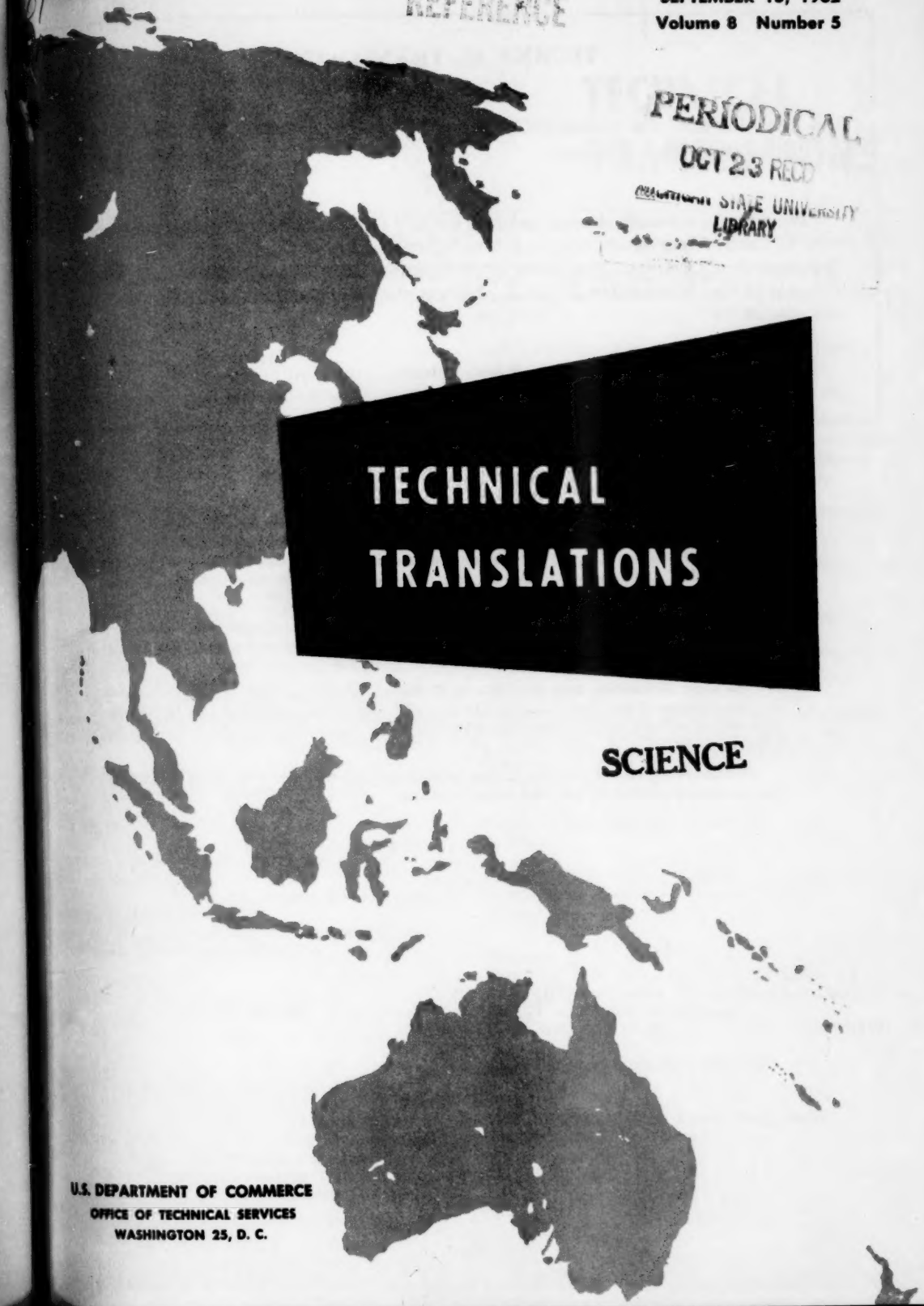

TECHNICAL TRANSLATIONS

SCIENCE

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
John C. Green, *Director*

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WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

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*Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

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This bulletin includes reports on visits, information from China, miscellaneous information, translations available from National Lending Library loan collection, and trans. of Pravda [Moscow] (USSR) 1962, no. 23, p. 1-2; Ekonomicheskaya Gazeta (USSR) 1961, no. 20, p. 4-5 and 1962 [no. 5(26)] p. 6-7; Neftekhimiya (USSR) 1961, v. 1, no. 4, p. 573-575; [Avtomobil'nyi Transport] (USSR) 1961 [v. 39] no. 11.

DESCRIPTORS: *Translations, Scientific reports, Scientific research, Economics, Science, Industrial production, Agriculture, Transportation, Culture, Conferences, *Adsorption, *Chromatographic analysis, *Traffic, Safety, Accidents, *Bibliography.
Contents:
The 1961 results of the fulfillment of the state plan for national economic development of the USSR
Progress in science and technology is the whole nation's task, by P. Abroskin
Conference on Adsorption and Methods of Chromatographic Analysis, Odessa, 24-29 May 61, by I. A. Nozhkina and V. G. Berezkin
The co-ordination of scientific research is a government problem, by K. Rudnev
Traffic organization and safety: causes of road accidents, by A. Shlyakhov and D. Burov.

AGRICULTURE

Borowski, W.
DETERMINATION OF THE CHARACTERISTIC HUMIDITY OF LIVESTOCK SHEDS [AND] TEMPERATURE, AIR HUMIDITY AND VENTILATION OF LIVESTOCK SHEDS (Okreslanie Charakterystycznej Wilgotnosci Pomieszczen Inwentarskich [and] Temperatura i Wilgotnosc Warstw Powietrza Oraz Wentylacja Pomieszczen Inwentarskich) tr. by Albert Radziwill. 1962 [22]p. 21 refs. PL-480 Agr.
Order from OTS $0.50 60-21572

Trans. of Roczniki Nauk Rolniczych. Ser[ia] B: [Zootechniczna] (Poland) 1959, v. 74, no. 1, p. 199-208 and [1960] v. 75, no. 1, p. 135-154.

DESCRIPTORS: *Animals, *Shelters, *Humidity, Temperature, *Ventilation, Climatic factors

Czyzyk, Wladyslaw.
DISPLACEMENT OF SLOPE SOIL DUE TO PLOWING (Przemieszczanie Gleby na Zboczu pod Dzialaniem Orki) tr. by J. Humnicka. 1962 [16]p. 5 refs. PL-480 Agr.
Order from OTS $0.50 60-21536

Trans. of Roczniki Nauk Rolniczych. Ser[ia] F: [Melioracji i Uzytkow Zielonych] (Poland) 1955, v. 71, no. 1, p. 73-85.

DESCRIPTORS: *Agricultural machinery, *Soils, *Erosion, Terrain.

Ivanova, E. N.
CLASSIFICATION OF SOILS OF THE NORTHERN PART OF THE EUROPEAN USSR (Sistematika Pochv Severnoi Chasti Evropeiskoi Territorii SSSR). 1962, 26p. 20 refs. PL-480 Agr.
Order from OTS $0.50 61-11496

Trans. of Pochvovedenie (USSR) 1956, no. 1, p. 70-88.

DESCRIPTORS: *Soils, *Classification, Fertility, Temperature, Moisture, Climatic factors.

Ivanova, E. N. and Semina, E. V.
SOILS OF THE ISOLATED PINE FORESTS IN KAZAKHSTAN (Pochvy Ostrovnykh Borov Kazakhstana). 1962, 17p. 23 refs. PL-480 Agr.
Order from OTS $0.50 61-11497

Trans. of Pochvovedenie (USSR) 1957, no. 9, p. 10-19.

DESCRIPTORS: *Soils, Trees, Pine, Sand, Forestry, Climatic factors.

Martini, Zbislaw.
THE PROBLEM OF MECHANIZATION IN AGRICULTURE ON TERRAINS SUBJECT TO EROSION (Problem Mechanizacji Rolnictwa w Terenach Erodowanych) tr. by D. Brzostowska. 1962 [14]p. 15 refs. PL-480 Agr.
Order from OTS $0.50 60-21543

Trans. of Zeszyty Problemowe Postepow Nauk Rolniczych (Poland) 1957, no. 8, p. 175-187.

DESCRIPTORS: *Agricultural machinery, Terrain, *Erosion.

Rode, A. A.
SOIL SCIENCE, tr. by A. Gourevitch. 1962, 517p. 105 refs. PL-480 Agr.
Order from OTS $5.25 61-31000

Trans. of mono. Pochvovedenie, Moscow/Leningrad, 1955 [524p.].

DESCRIPTORS: *Soils, Physical properties, Moisutre, Temperature, Fertility, *Forestry, Deserts, Mountains, Classification.

The book consists of an Introduction and 22 Chapters. The Introduction tells the history of soil science and gives an idea of the position of soil upon the globe, as well as of its significance as a means of production in forest husbandry. The first thirteen Chapters deal with the general doctrine of soils: their mechanical and chemical composition, humus and its origin, physical properties of soils, soil colloids, moisture and temperature regimes of the soil, fertility of soils, factors of soil formation, and laws of geographical distribution of soils. Chapters XIV-XXI describe the main soil types according to zones, starting from the tundra and ending with desert and mountain soils. Each type is characterized by its make-up and its properties, and special attention is given to those features that concern forest growth. Soils of the forest and forest-steppe zones receive a more detailed treatment. Particular sections deal with problems of pedology that arise in field-protective afforestation. The concluding Chapter consists of a comparative study of soil types. (Soviet publishers note)

Animal Husband.,

POLISH AGRICULTURAL ANNUAL, SERIES B: SELECTED ARTICLES, tr. by Maria Radziwill. 1962 [32]p. 34 refs. PL-480 Agr.
Order from OTS $0.50 60-21571

Trans. of Roczniki Nauk Rolniczych. Ser[ia] B: [Zootechniczna] 1954, v. 67, no. 4, p. 473-486; 1959, v. 74, no. 2, p. 375-378; 1960, v. 75, no. 3, p. 283-299.

DESCRIPTORS: *Cattle, Reproduction, Blood, *Leukocytes, *Milk, Milk fat, *Iodine, Agriculture.

Contents:
Attempt at evaluation of the breeding value of bulls on the basis of the blood leukocyte pattern, pt. 1, by S. Groblewska
Evaluation of the breeding value of bulls on the basis of the blood leukocyte pattern, pt. 2, by S. Groblewska
Changes in iodine value of cow's milk, by I. Leonhard.

Gannushkin, M. S.
GENERAL EPIZOOTOLOGY. 16 May 62 [282]p. JPRS: 13780.
Order from OTS or SLA $18.00 62-24707

Trans. of mono. Obshchaya Epizootologiya, Moscow, 1961, 264p.

DESCRIPTORS: Veterinary medicine, Animals, *Infections, *Diagnosis, Therapy, *Control, *Epidemiology, *Immunology, Antigens, *Microorganisms, *Disease carriers, *Pest control, *Disinfectants.

Contents:
Bases of the study of infection and the conditions of its development
Susceptibility and resistance of the organism to infection
Sources of infection
Methods of transmission and routes of spread of infectious diseases
Epizootologic classification of infectious diseases in agricultural animals
The development and course of epizootics
General prophylaxis
Measures for elimination of infectious diseases
Special prophylaxis (inoculations)
The treatment of animals in the case of infectious diseases
Disinfection, disinsectization, and deratization

Kagan, F. I., Nikiforova, N. M., and Kolesova, A. I.
ASSOCIATED VACCINE AGAINST EMPHYSEMATOUS CARBUNCLES, MALIGNANT EDEMA AND PASTEURELLOSIS (Assotsiirovannaya Vaktsina Protiv Emfizematoznogo Karbunkula, Zlokachestvennogo Oteka i Pasterelleza). 14 Dec 61, 5p. Trans. V-1754.
Order from OTS or SLA $1.10 62-23301

Trans. of Veterinariya (USSR) 1961, v. 38, no. 8, p. 21-22.

DESCRIPTORS: Diseases, *Edema, *Suppurative infections, *Bacterial vaccines, Immunology.

An associated aluminum-hydroxide formal-precipitated vaccine provided immunity for 282 laboratory animals (guinea pigs, rabbits, and pigeons), 34 calves and 7 sheep under experimental conditions, and more than 5000 cattle on farms. The vaccine retains its original properties for 12 months and creates a sufficient immunity for at least 4 to 6 months.

Komarov, N. M.
RESULTS OF DEVELOPMENT OF ZOOHYGIENE DURING 40 YEARS AND ITS SUBSEQUENT PROBLEMS (Itogi Razvitiya Zoogigieny za 40 Let i Ee Dal'neishie Zadachi). 28 Feb 62, 29p. 2 refs. Trans. V-1767.
Order from OTS or SLA $2.60 62-23563

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 160-174.

DESCRIPTORS: *Veterinary medicine, History, Scientific research, Animals.

Kovalenko, Ya. R.
DEVELOPMENT AND ACHIEVEMENTS OF VETERINARY SCIENCE IN THE USSR (Razvitie i Uspekhi Veterinarnoi Nauki v SSSR). [1962] 51p. 3 refs.
Trans. V-1761.
Order from OTS or SLA $5.60 62-23564

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 3-28.

DESCRIPTORS: *Veterinary medicine, History, Scientific research, Animals.

Rohde, R. and Pachl, K.
SALMONELLOSIS IN SLAUGHTERED FOWL, A SERIOUS PROBLEM IN VETERINARY FOWL SURVEILLANCE. 17 Nov 61 [16]p. JPRS: 11138.
Order from OTS or SLA $1.60 62-19733

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 9, p. 351-354.

DESCRIPTORS: *Salmonella infections, Microbiology, *Birds, Diseases, *Veterinary medicine, Chickens

Tarkiewicz, Stanislaw.
MOSCOW VETERINARY ACADEMY. 7 June 62 [12]p. JPRS: 14048.
Order from OTS or SLA $1.60 62-25059

Trans. of Medycyna Weterynaryjna (Poland) 1961, v. 17, no. 11, p. 687-691.

DESCRIPTORS: *Scientific organizations, *Veterinary medicine, History.

Tunkl, B., Richter, S., and Romic, Z.
IMMUNOPROPHYLAXIS OF BABASIASIS OF CATTLE (Imunoprofilaksa Babezieloze Goveda). 11 Sep 61 [10]p. JPRS: 10107.
Order from OTS or SLA $1.10 62-19710

Trans. of Veterinarski Glasnik (Yugoslavia) 1961, v. 15, no. 2, p. 93-98.

DESCRIPTORS: *Cattle, *Babesiasis, Parasites, Infections, *Immunization, Veterinary medicine

Investigations showed that in cattle the vaccine carrier, after many treatments with blood of cattle of babesiasis in an acute state, contains live agents of babesiasis which have lost much of their pathogenity, but have preserved the ability to create active immunity. The weakening of the pathogenity of injected agents could be explained by the fact that in the course of the above procedure certain matter is created in the organism of the vaccine carrier which gradually weakens the pathogenity of the agents. In the blood of the vaccine carrier characteristic forms of parasites could not be established, but by injecting their blood into other nonimmunized cattle, typical forms of babesiasis developed in the majority of cases during the corresponding time of incubation. Meanwhile, in the blood of the vaccine carrier and also in the blood of vaccinated animals, certain round anaplasmoid formations were found three weeks after vaccination. These formations were not found in untreated animals; these could be certain stages of babesiasis. The vaccine was not harmful even to older cattle, althought, according to the observations in Algiers and Sweden, older cattle are more sensitive to the vaccine than young ones under two years of age. The presence of agents in the blood of vaccinated cattle indicates that a solid active immunity is developed in three weeks. This means that vaccination should be performed at the latest three weeks before the cattle are exposed to the infection. The immunity seems to last at least a year.

Zarnowski, Eugeniusz and Darski, Jerzy.
STUDIES ON THE TREATMENT OF ASCARIASIS IN HENS (Badania nad Terapia Glistnicy Kur) tr. by W. Kulerski. 1961 [14]p. 22 refs. PL-480 Agr.
Order from OTS $0.50 60-21222

Trans. of Medycyna Weterynaryjna (Poland) 1957 [v. 13] no. 7, p. 387-393.

DESCRIPTORS: *Chickens, *Parasites, Worms, *Ascaris, Infections, Drugs, Carbon tetrachloride, Phenothiazine derivatives, *Ascaridoles, *Benzine, *Sodium compounds, Fluorides, *Pyrazine.

Some 225 chickens of the Sussex and Green-Foot breeds, 1 to 2 months old and free of parasites, were each infected with 120 to 150 invasive Ascaridia galli eggs. The chicks were kept in cages with floors that allowed the droppings to fall onto trays. For six to eight days after a remedy was administered the worms excreted with the droppings were counted; the chicks were then killed and examined for parasites. The percentage of effectiveness of the remedy was found by comparing the number of worms found on autopsy with the number excreted with the droppings. The following remedies were tested: (1) carbon tetrachloride, injected with syringe and rubber tube in single 2-ml doses into the gullets. (2) phenothiazine given orally in single 1.5 g/kg doses on empty stomachs, (3) chenopodium oil in single doses of 0.1 ml/kg with 3 ml of caster oil, (4) powdered pyrethrum flower given as a 2% supplement to the feed, (5) benzine, both petroleum and synthetic, (6) sodium fluoride, and (7) piperazine adipate in doses of 8 g/4.5 liter given in the drinking water for 8 consecutive days. The carbon tetrachloride was 100% effective, the pyrethrum flowers was 96% effective, and the piperazine adipate was 98% effective. The Sussex breed proved to be more resistant to the Ascaridia galli invasion than the Green-Legs breed.

Plant Cultivation

PLANT PROTECTION FROM PESTS AND DISEASES, 1961, VOL. 6, NOS. 4-5, 7 AND 12: [SELECTED] ARTICLES. 18 June 62 [38]p. JPRS: 14272.
Order from OTS or SLA $3.60 62-25487

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1961, v. 6, no. 4, p. 41-47; no. 5, p. 55-57, 59; no. 7, p. 1-2 and 58-59.

DESCRIPTORS: *Insects, *Plants, *Diseases, Microbiology, Machines, Herbicides, *Pest control, Insecticides, Organic compounds, Phosphorus, Agriculture, Scientific reports.

Contents:
50th Anniversary of the Turkestan Entomological Station, by E. N. Ivanov
Agronomists survey the Moscow Area, by Yu. N. Aviation in crop protection
In the Scientific-Technical Council of the Ministry of Agriculture USSR, by I. Chervinskii
Symposium on Microbiological Methods of Plant Protection from Pests (Leningrad, 21-24 Dec 60) by N. S. Fedorinchik
At a session of the executive committee of the European and Mediterranean Organization for Plant Protection, by V. V. Kosov
Machines for plant protection, by I. F. Snegovskii
Organo-phosphorus insecticides (continuation) by P. V. Popov
Conference on Herbicides (29 Nov-3 Dec 60) by N. A. Shipinov
Session of the Scientific Council of the All-Union Scientific Research Institute on Plant Protection, by E. I. Popova

Arai, Kaneó, Iida, Masanao, and Kisaki, Takuro.
CHANGE IN THE ALKALOID CONTENT OF THE TOBACCO PLANT DURING ITS GROWTH AND FLUE-CURING. [1962] 16p.
Order from K-H $20.00 K-H 11707

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1961, no. 103, p. 45-49.

DESCRIPTORS: *Tobacco, Growth, Processing, *Alkaloids, Plants.

Bailov, D., and Andrejceva, M.
A COLOR REACTION FOR THE OBJECTIVE DETERMINATION OF THE TECHNICAL RIPENESS OF TOBACCO LEAF. [1962] 3p.
Order from K-H $3.75 K-H 11095-a

Trans. of [Bulgarska Akademiya na Naukite. Doklady] 1960, v. 13, no. 3, p. 363-364.

DESCRIPTORS: Plants, *Tobacco, Colorimetry.

Berbec, J. and Drzas, E.
STUDIES OF QUALITATIVE VALUE OF SOME HOMEGROWN VARIETIES OF POLISH CIGARETTE TOBACCO. [1962] 25p.
Order from K-H $14.38 K-H 11092-a

Trans. of Hodowla Roslin, Aklim[atyzacja] i Nasiennictwo (Poland) 1960, v. 4, no. 4, p. 449-476.

DESCRIPTORS: *Tobacco, Cigarettes, Poland.

Boceski, Dusko.
OBJECTIVE DETERMINATION OF THE DEGREE OF FERMENTATION OF ORIENTAL TOBACCOS. [1962] 8p.
Order from K-H $10.00 K-H 11627-b

Trans. of Duvan (Yugoslavia) 1961, v. 11, no. 6/7, p. 211-216.

DESCRIPTORS: *Tobacco, *Fermentation, Plants.

Bodurov, Dimitar.
THE RELATIONSHIP BETWEEN THE EXTERNAL CHARACTERISTICS OF TOBACCO LEAVES AND THEIR CHEMICAL AND SMOKING PROPERTIES. [1962] 9p.
Order from K-H $11.25 K-H 11499-a

Trans. of Bulgar[ski] Tyutyun, 1961, v. 6, no. 6, p. 39-44.

DESCRIPTORS: *Tobacco, Plants, Chemical properties, *Smokes.

Fujiwara, A. and Kurosawa, M.
STUDIES ON BITING TASTE OF BURLY TOBACCO LEAVES. [1962] 24p.
Order from K-H $30.00 K-H 4020-a

Trans. of [Nihon Dojo Hiryogaku Zasshi] (Japan) 1955, v. 26, no. 6, p. 7-14.

DESCRIPTORS: Plants, *Tobacco, *Taste.

Hofman, Frank and Moldenhauer, Walter.
SEPARATION AND DETERMINATION OF THE TOBACCO ALKALOIDS NICOTINE AND NORNICOTINE. [1962] 20p.
Order from K-H $25.00 K-H 11711

Trans. of Inst[itut für] Tabak[forschung]. Ber[ichte] (East Germany) 1961, v. 8, no. 1, p. 87-101.

DESCRIPTORS: *Tobacco, *Alkaloids, *Nicotine, Chemical analysis.

Lobov, M. F.
RELATIONSHIPS BETWEEN GROWTH AND CONCENTRATION OF CELL SAP IN PLANTS (Sootnosheniya Mezhdu Rostom i Kontsentratsiei Kletochnogo Soka u Rastenii). [1962] 14p. 38 refs.
Order from OTS or SLA $1.60 62-10746

Trans. of Botanicheskii Zhurnal (USSR) 1951, v. 36, no. 1, p. 21-28.

DESCRIPTORS: *Plants, Growth, *Age, Cells (Biology), *Plasma volume, Water, Metabolism, *Water supplies, Control, Irrigation systems, Bibliography.

A method of setting irrigation dates was developed based upon the concentration of the cell sap for the index.

Schuette, Horst-Robert.
THE INSTITUTE FOR PLANT BIOCHEMISTRY OF THE GERMAN ACADEMY OF SCIENCES OF BERLIN IN HALLE/SAALE. 1 Nov 61 [12]p. JPRS: 11000.
Order from OTS or SLA $1.60 62-24534

Trans. of Chemische Technik (East Germany) 1961, v. 13, no. 6, p. 377-379.

DESCRIPTORS: *Plants, Biochemistry, Radioactive isotopes.

Slabonski, Andrzej.
BREEDING OF WHEAT AND OAT VARIETIES RESISTANT TO SMUT FUNGI (Hodowla Odmian Pszenicy i Owsa Odpornych na Sniecie i Glownie) tr. by Maria Radziwill. 1961, [17]p. 31 refs. PL-480 Agr.
Order from OTS $0.50 60-21579

Trans. of Instytut Hodowli i Aklimatyzacji Roslin. Biuletyn (Poland) 1959, no. 4/5. p. 37-38.

DESCRIPTORS: Plants, *Cereals, *Wheat, *Oats, *Fungus infections, Control, Resistance.

Ukrainskii, V. T.
FIELD GERMINATION AND SEEDLING SURVIVAL OF PERENNIAL FORAGE GRASSES IN THE STEPPE ZONE (Polevaya Vskhozhest' i Sokhranyaemost' Vskhodov Mnogoletnikh Trav v Stepnoi Zone). 1962, 8p. PL-480 Agr.
Order from OTS $0.50 60-51047

Trans. of Sovetskaya Agronomiya (USSR) 1953, v. 11, no. 3, p. 48-54.

DESCRIPTORS: *Seeds, Plants, *Grasses, Soils, Water, Absorption, Temperature, Agriculture.

The following conditions assure a good development of perennial forage grasses, independently of whether sowing is done in spring or fall: sufficient soil moisture at the sowing period; absence of weeds; separate sowing of grass seed and of the seed of protective crops. Field germination and seedling survival of perennial grasses under steppe conditions depend to a great extent on the origin and the conditions under which their seed was grown. For this reason it is recommended to use seed collected from spring-sown plants whenever sowing is done in spring. Sowing of couch grass, bromegrass and Euagropyrum can be done under spring, summer or fall conditions, taking into consideration the conditions under which the seeds were grown and the purpose for which the seeds of the crops obtained will be used - whether for spring, summer or fall sowings. It is recommended to make a wider use of the summer season for the growing of perennial grasses for seed purposes from the second part of July till the first part of August. When sown in summer, the plants have time to complete their first tillering stage and are able to develop well before frost sets in. July-sowing of perennial forage grasses mixed with sainfoin (Onobrychis) and with alfalfa assure a good development of these crops. When soil moisture is sufficient, seedlings from the spring and summer sowings under steppe zone conditions are not affected by high air temperatures. (Author)

ASTRONOMY

Astrophysics

ATMOSPHERE OF MARS: REVIEW OF SOVIET LITERATURE. Chap. 3 of Soviet Research on the Atmospheres [and surfaces] of Venus, Mars and the Moon. 31 Oct 61 [35]p. 23 refs. AID rept. 61-138.
Order from OTS or SLA $3.60 62-13289

DESCRIPTORS: *Mars, *Planitary atmospheres, Surface conditions, Photographic analysis, Colorimetric analysis, *Spectrographic analysis, *Temperature, *Plants, Bibliography.

A NEW SATELLITE CAMERA. 29 Dec 59 [6]p. SC-62/59.
Order from OTS or SLA $1.10 60-23950

Trans. of Bild und Ton (Germany) 1959 [v. 12] no. 6, p. 176-177 (abridged trans. by Rudolf Wendel, Jena, from Foto-magasinet [sic] (Denmark) 1958, Nov.).

DESCRIPTORS: *Astronomical cameras, Cameras, Design, Operation, *Satellites, Tracking.

SCIENCE AND LIFE, 1961, VOL. 28, NO. 3: SELECTED ARTICLES. 16 Mar 62 [56]p. FTD-TT-62-1
Order from OTS or SLA $5.60 62-24955

Unedited rough draft trans. from Nauka i Zhizn' (USSR) 1961, v. 28, no. 3, p. 7-11 and 17-32.

DESCRIPTORS: *Venus, *Moon, Satellites, Solar systems, Lunar probes, Photographic analysis, Radio astronomy, Planets.

Contents:
Towards Venus
Towards the mysterious planet, by F. Yu. Tsigel'
Symposium "The Moon", by I. Linder
The opposite side of the moon, by A. A. Mikhailov
Study of the photographs, by Yu. N. Lipskii
Three questions and twenty-four answers, by M. S. Zverev and others
From outer space, by N. Bonev.

SURFACE AND ATMOSPHERE OF THE MOON: REVIEW OF SOVIET LITERATURE. Chap. 4 of Soviet Research on the Atmospheres and Surfaces of Venus, Mars, and the Moon. 20 Mar 62 [69]p. 52 refs. AID rept. 62-4.
Order from OTS or SLA $6.60 62-24481

DESCRIPTORS: *Moon, *Extraterrestrial geography, *Mapping, Rocks, *Geogony, *Volcanoes, Magnetic fields, Colorimetric analysis, Albedo, Polarization, Temperature, *Planetary atmospheres, Astronautics, Bibliography.

Contents:
Revolution and rotation periods
Lunar relief
Physical properties of the lunar surface
Lunar surface formations
Lunar atmosphere
Volcanic activity.

Astavin-Razumin, D. L.
INTERFERENCE IN PHOTOELECTRIC OBSERVATIONS OF METEORS. 30 Jan 62, 2p. AID rept. 62-15.
Order from OTS or SLA $1.10 62-23694

Abstract trans. of Vsesoyuznoe Astronomo-Geodezicheskoe Obshchestvo. Byulleten' (USSR) 1960, v. 35, no. 28, p. 6-10.

DESCRIPTORS: *Meteors, Detection, Interferences, Night sky, Luminescence, Stars, Light, *Photomultipliers.

Primary external and internal interference encountered in photoelectric observations of meteors is briefly surveyed, and measures for controlling or attenuating it are presented. The three principal external sources of interference can be minimized by moving the observation site as far away as possible from large cities to regions of minimum night-sky luminescence and under zenith areas of minimum stellar and terrestrial scintillations. With interference from night-sky luminescence, ordinary photomultipliers should be replaced with 5820 and 6849 orthicon tubes in order to obtain physical radiation sensors with a current-carrying capacity of the order of 10 microamp at the outlet. Internal interference can be attenuated by cooling the photomultiplier and the input resistance of the tube amplifier.

Mandelshtam, S. L., Voron'ko, Yu. K. and others.
INVESTIGATION OF THE X-RAY RADIATION FROM THE SUN DURING THE TOTAL SOLAR ECLIPSE ON 15 FEB 61, tr. by A. Pingell. 10 Apr 62, 10p. 8 refs. N R L Trans. no. 892.
Order from OTS $0.50 62-11678

Trans. of mono. Issledovanie Rentgenovskogo Izlucheniya Solntsa vo Vremya Polnogo Solnechnogo Zatmeniya 15 Fevralya 1961 G. (Akademiya Nauk SSSR. Fizicheskii Institut. Rept-A-109).

DESCRIPTORS: *Solar eclipse, *Sun, *X-rays, Intensity, Measurement, Spectrographic data, Geophysics, Rocket research.

The results are discussed of measurement of the X-ray radiation from the sun in the spectral region shorter than 10 Å during the total eclipse, which were carried out by means of a geophysical rocket reaching the height of about 96 km. There is a very good correlation between the flux of the X-ray radiation and the index of the green line. This confirms that the short wavelength region of the solar spectrum originates from all areas of the corona, in which the line 5303 Å is stimulated.

ENGINEERING FOR YOUTH, 1961 [VOL. 29] NO. 2: SELECTED LETTERS. 5 Apr 62 [13]p. 1 ref. FTD-TT-62-163.
Order from OTS or SLA $1.60 62-24277

Unedited rough draft trans. of Tekhnika Molodezhi (USSR) 1961 [v. 29] no. 2, p. 30-33.

DESCRIPTORS: *Biolectronics, *Biophysics, Human engineering, Brain, Physiology, Electrical properties, *Perception.

Four separate articles on telepathy or thought transferrence are presented. D. Mirza, in his article entitled, Is Telepathy Possible, says "Only further investigation can give the answer to this question." N. Dzhavadyan, in his article entitled, The Bio-Currents of the Brain and Thought, says, "It is indeed regrettable that in our century, the century of the discovery of atomic energy and the mastery of the cosmos, the belief in mental telepathy should be so wide-spread.... Those who assume that telepathy is possible err gravely." O. Adrianov, in It Is Necessary to Experiment says, "Many famous scientists, ours as well as foreign, give serious attention to these phenomena.... A number of questions concerning the phenomena of thought transferrence deserve serious attention and demand further systematic study on the basis of new technological advances. L. Vodolazskiy, in his article entitled, The Brain, it Would Appear, Has Electromagnetic Activity, reviews an experiment that he conducted in 1936 with T. Gurshteyn, and concludes, "The progress of electronics permits the appropriate studies to be made on a high scientific and technological level and new proof to be obtained that the phenomena which are considered mystical have a solid physiological basis."

Gaaze-Rapaport, M. G.
PRESENT-DAY SIMULATORS OF ANIMAL BEHAVIOR: FEEDBACK. 12 Apr 62 [13]p. JPRS: 13421.
Order from OTS or SLA $1.60 62-23839

Trans. of mono. Avtomaty i Zhivye Organizmy (Automatic Machines and Live Organisms) Moscow, 1961, sect. 1, chap. 3, p. 42-48.

DESCRIPTORS: *Behavior, Simulation, *Machines, Conditioned reflex.

Personnel and Training

BIOGRAPHIES OF RUSSIAN SCIENTISTS. 9 Apr 62 [77]p. JPRS: 13435.
Order from OTS or SLA $7.60 62-24009

Trans. of 28 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Medical personnel, Engineering personnel, Mathematicians, Physics, Chemical engineering, Agriculture, Geography, Personnel.

Contents:
M. I. Barsukov, L. M. Belyaev, N. M. Belyaev, D. P. Borisov, V. M. Glushkov, N. N. Gorev, V. I. Ivanov, V. A. Iz"yurov, S. V. Kalesnik, D. N. Kalyuzhnyi, E. V. Khait, M. A. Lavrent'ev, A. V. Lykov, A. A. Lyubishchev, G. D. Malyuzhinets, M. S. Maslov, E. V. Maslov, N. I. Plaksin, V. A. Privezentsev, I. Y. Razdol'skii, V. M. Sporyshev, N. A. Tsov'yanov, V. N. Tsvetkov, V. K. Vasil'ev, F. P. Vinokurov, K. N. Zhmakin, A. B. Zhukov, V. G. Zusman.

BIOGRAPHIES OF SOVIET SCIENTISTS. 31 May 62 [53]p. 61 refs. JPRS: 13986.
Order from OTS or SLA $5.60 62-24964

Trans. of 24 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Botanists, Medical personnel, Philosophy, Agriculture, Surgery, Oceanography, Meteorology, Neurology, Pathology, Personnel.

Contents:
K. S. Afanas'ev, O. G. Ageeva-Maikova, A. M. Belaev, A. M. Bogoutdinov, S. N. Davidenkov, V. I. Edel'shtein, I. L. Faerman, M. V. Fedorov, A. M. Geller, N. G. Karapetyan, N. P. Kniga, M. P. Mal'kovskii, Yu. G. Mamedaliev, B. V. Ognev, S. A. Poplavskii, Yu. V. Prebrazhenskii, Ya. I. Prints, N. P. Prokof'ev, V. I. Prozorovskii, L. A. Razumova, A.Redulesku, A. M. Sokolov, A. A. Tvalchrelidze, V. N. Vasil'ev.

BIOGRAPHIES OF SOVIET SCIENTISTS. 8 June 62 [30]p. JPRS: 14078.
Order from OTS or SLA $2.60 62-25162

Trans. of 13 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Medical personnel, Geology, Agriculture, Mechanics, Personnel.

Contents:
R. S. Buyanovskaya, K. M. Figurnov, A. K. Ivanov, E. E. Klionskii, N. I. Kornetov, I. M. Leonov, A. P. Nikolaev, M. M. Odinstov, I. Ya. Shataerman, R. L. Shub, A. I. Titova, V. A. Zheligovskii, M. D. Zhudin.

ORGANIZATIONAL CHART OF GERMAN ACADEMY OF SCIENCES, BERLIN. [1958] [6]p. F-TS-9519.
Order from OTS or SLA $1.10 59-12161

Trans. of mono. Deutsche Akademie der Wissenschaften zu Berlin, n.d., 11p.

DESCRIPTORS: *Scientific organizations, Scientific personnel, Germany, Science.

Apenchenko, Ol'ga.
A HARD ROAD TO THE SKY. A Reporter's Account of Cosmonaut Training. 16 Mar 62 [103]p. FTD-TT-62-148.
Order from OTS or SLA $9.10 62-24952

Unedited rough draft trans. of mono. Truden Put' Do Tebya, Nevo, Moscow, 1961, 79p.

DESCRIPTORS: *Astronauts, Training, Pilots, Space flight, Weightlessness, Spaceships, Satellite vehicles.

Heese, A.
PERSONNEL AND SOCIAL WORK IN A METALLURGICAL PLANT. June 62.
Order from BISI £3 15s BISI-2637

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 16] p. 1063-1069.

DESCRIPTORS: *Personnel, *Sociology, Job analysis, Accidents, Employee relations, *Metallurgy.

Rueger, W. and Weise, H.
BIOGRAPHIC INFORMATION ON EAST GERMAN ENGINEERS KARL NEUBERT AND ALFRED ZAPPE. 12 Dec 60 [6]p. JPRS: 4265.
Order from OTS or SLA $1.10 62-24561

Trans. of Vermessungstechnik (East Germany) 1960, v. 8, no. 6, p. 179-180.

DESCRIPTORS: *Engineering personnel, East Germany.

Satpaev, K. I. and Chokin, Sh. Ch.
CANDIDATES FOR ACADEMICIANS AND CORRESPONDING MEMBERS OF THE ACADEMY OF SCIENCES KAZAKH SSR. 20 Apr 62 [17]p. JPRS: 13536.
Order from OTS or SLA $1.60 62-24247

Trans. of Kazakhstanskaya Pravda (USSR) 1962, no. 70, p. 3-4.

DESCRIPTORS: *Scientific personnel, Scientific organizations.

Steege, H. H.
ON SOME QUESTIONS ABOUT THE TRAINING OF EAST GERMAN CHEMICAL STUDENTS IN ECONOMICS. 22 Dec 61 [11]p. JPRS: 11629.
Order from OTS or SLA $1.60 62-24535

Trans. of Chemische Technik (East Germany) 1961, v. 13, no. 9, p. 560-563.

DESCRIPTORS: Chemistry, *Students, *Training, Chemical industry, *Economics, East Germany.

The relationship between politics, economics and technology is no longer reduced to a matter of operative earnings. This relationship is substantially more comprehensive and requires educated economic thinking and a good knowledge of economic relations. Only if our chemists and technicians have the necessary

general view about the relationships that exist between scientific and technical problems, economics and politics, can they be in a position to recognize and fully use the great possibilities offered by our order of society for the development of research in their field. (Extract)

BIOLOGICAL SCIENCES

NEWS OF THE ACADEMY OF SCIENCES USSR, BIOLOGY SERIES, 1962, NO. 1: SELECTED ARTICLES. 24 Apr 62 [55]p. 28 refs. JPRS: 13562.
Order from OTS or SLA $5.60 62-24250

Trans. of Akademiya Nauk SSSR Izvestiya. Seriya Biologicheskaya, 1962 [v. 27] no. 1, p. 84-95, 102-105, 122-130, 141-150.

DESCRIPTORS: *Space medicine, *Explosive decompression, Decompression sickness, Acceleration, Gravity, *Acceleration tolerance, *Bioelectronics, Retina, *Radiation effects, * Eye, Cornea, Cobalt, *Radioactive isotopes, *Water, Biochemistry, Radiobiology.

Contents:
The effect of explosive decompression on the organism, by V. I. Yazdovskii and others
Animal tolerance of high G force acting along a line close to the longitudinal axis of the body, by E M. Yuganov and others
Electroretinogram of irradiated eye and induction of the cornea, by V. V. Popov and A I. Farberov
The distribution of Co^{60} and some radioisotope fission products among the components of experimental bodies of water, by I. O. Bogatyrev
The International Biochemical Congress (no. 5) by A. I. Oparin.

RECENT SOVIET ACTIVITIES IN THE BIOLOGICAL BOTANICAL AND ZOOLOGICAL SCIENCES. 30 Apr 30 Apr 62 [31]p. JPRS: 13669.
Order from OTS or SLA $3.60 62-24401

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1961 [v. 26] no. 2, p. 330-333; #Fiziologiya Rastenii (USSR) 1961, v. 8, no. 1, p. 141-142; Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 3, p. 463-465; Akademiya Nauk Turkmenskoi [Ashkhabad]. Izvestiya. Seriya Biologicheskikh Nauk, 1961, no. 2, p. 86-88; Zoologicheskii Zhurnal (USSR) 1961, v. 40 no. 6, p. 953-955.

DESCRIPTORS: *Conferences, *Plants, Agriculture, Cotton, Physiology, Biochemistry, *Citric acids, *Malic acid, Marine biology, *Animals, Geography, Scientific research. Scientific personnel.
Contents:
The visiting scientific session of the Division of Biological Sciences of the Academy of Sciences of USSR in Leningrad
Siberian Conferene of Plant Physiologists and Plant Biochemists (no. 1) 6-9 Sep 60, by L. D. Prusakova
The decision of the Siberian Conference of Plant Physiologist and Biochemists (no. 1) Irkkutsk, 6-9 Sep 60
All-Union Scientific-Technical Conference of Seaweed Industry (no. 1) Arkhangel'sk, 17-21 Oct 60, by G. K. Barashkov
A yearly conference of the Academy of Sciences of Turkmen SSR (21 Mar 61)
Conference for Coordination of Scientific Research, Experimental and Construction
Works for the Production of Citric acid and Malic Acid from Cotton Plant Leaves, by A. P. Bazhanova
All-Union Conference Concerning the Zoogeography of the Land (no. 2) Alma Ata, 15-21 Aug 60, by F. I. Strautman.

REPORTS OF THE ACADEMY OF SCIENCES USSR [1962] VOL. 142, NO. 1: SELECTED ARTICLES. 20 June 62 [26]p. 55 refs. JPRS: 14202.
Order from OTS or SLA $2.60 62-25504

Trans. of Akademiya Nauk SSSR. Doklady [1962] v. 142, no. 1, p. 208-218 and 233-236.

DESCRIPTORS: *Ionization, *Cells (Biology), Streptomycins, *Nuclei (Biology), Synthesis, Polymers, *Nucleic acids, *Glycogen, Leukocytes, *Regeneration, *Nerves.

Contents:
The cytogenic effect of ionizing radiation and streptomycin, by L. V. Cherezhanova and N. P. Dubinin
The role of the nucleus in the synthesis of low-polymer ribonucleic acid (S-RNA) by G. P. Georgiev
Glycogen in human leukocytes and its transformations, by I. S. Luganova and I. F. Seits
Stimulation of the regeneration process of the lizard extremity by the method of supplementary innervation, by V. P. Kudokotsev.

Gazenko, O. G.
CERTAIN PROBLEMS OF SPACE BIOLOGY. 22 Mar 62 [11]p. FTD-TT-62-412.
Order from OTS or SLA $1.60 62-24338

Unedited rough draft trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 1, p. 30-34.

DESCRIPTORS: *Space medicine, *Space flight, *Space environmental conditions, Spaceships, Weightlessness, Spaceship cabins, Cosmic rays, Physiology, Astronautics, Biology.

Koltovoi, B.
THE MATHEMATICS OF A LIVING ORGANISM. 29 May 62 [8]p. JPRS: 13912.
Order from OTS or SLA $1.10 62-24983

Trans. from Izvestiya (USSR) 1962, no. 84, p. 3.

DESCRIPTORS: *Mathematics, Cells (Biology), *Biology.

Nikolaeva, T.
MAN AND HIS ENVIRONMENT (Chelovek i Sreda). 18 June 62 [9]p. JPRS: 14154.
Order from OTS or SLA $1.10 62-25173

Trans. from Meditsinskii Rabotnik (USSR) 1962 [v. 25] no. 13, p. 3.

DESCRIPTORS: *Man, *Ecology, Conferences, Medicine, Public health.

Petrov, Yu. V.
THE VALUE OF THE AXIOMATIC METHOD IN STUDYING DIRECTIONS OF CHANGE IN LIVING SYSTEMS. 18 Dec 61 [37]p. 18 refs. JPRS: 11523.
Order from OTS or SLA $3.60 62-13723

Trans. of mono. Primenenie Logiki v Nauke i Tekhnike (The Application of Logic in Science and Technology) Moscow, 1960, p. 178-214.

DESCRIPTORS: *Biology, *Physiology, Growth, *Mathematical logic, *Genetics, Mathematical predictions, Bibliography.

The theory of the types of changes in organs is used to determine the applicability of the axiomatic method of logic in predicting the direction of changes in living organisms. These changes are classified as (1) organic changes (2) functional changes and (3) structural changes. Changes which occur within these classifications are listed and designated by letter symbols. Using these symbols, formulae are given to predict the theoretical directions of changes. There are 13 rules of inference listed which are used in constructing a Theory of Types of Change in Living Systems. The derivation of 8 propositions of theories of these changes is given with the step by step application of each proposition used in predicting the direction of these changes. All the propositions are new and were obtained by applying the axiomatic method to predict the direction of change in living systems.

Ryzhkov, V. L.
PARADOXES OF ADAPTATION. 24 Apr 62 [14]p. JPRS: 13563.
Order from OTS or SLA $1.60 62-24251

Trans. of Priroda (USSR) 1962, v. 51, no. 2, p. 33-39.

DESCRIPTORS: *Biology, Pathology, Immunization, Allergies, Drugs, Sensitivity, Proteins, Cells (Biology), Antibodies, *Man, *Plants.

Adaptability arises in the process of the formation of the species, as a result of variability and struggle for existence which lead to the survival of the species best adapted to given conditions and reacting in the most relevant manner to changes in these conditions. No matter how easily individual species may adapt themselves to changing conditions, adaptability is relative. If conditions change in a too drastic and sudden a manner, an organism is no longer capable of reacting appropriately to them. This is because adaptability is not some supernal gift but the product of a historically long struggle for existence. In many cases the process by means of which an organism protects itself from unfavorable conditions causes greater detriment to the organism than the conditions to which it reacted.

Sh., G. and Vasil'ev, L.
THE ABC'S OF THE PENTAGON [AND] PLANTING IN A TEST TUBE. 20 June 62 [10]p. JPRS: 14200.
Order from OTS or SLA $1.10 62-25512

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1962 [v. 4] no. 2, p. 56-57 and 60-61.

DESCRIPTORS: Propaganda, *Warfare, Chemical warfare, *Biological warfare, *Plants, Transplantation, *Tissues (Biology), Culture media, Growth.

Zhdanov, D. A. and Lev, I. D.
RESOLUTIONS OF THE PLENUM OF THE BOARD OF THE ALL-UNION SCIENTIFIC SOCIETY OF ANATOMISTS, HISTOLOGISTS AND EMBRYOLOGISTS (IRKUTSK, 23-24 June 61) [AND] READER'S CONFERENCE OF MORPHOLOGISTS OF EASTERN SIBERIA (IRKUTSK, 27 JUNE 61). 11 June 62 [15]p. JPRS: 14137.
Order from OTS or SLA $1.60 62-25186

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1961, v. 41, no. 10, p. 122-127.

DESCRIPTORS: Conferences, *Research program administration, Anatomy, Histology, Embryology, Morphology.

Anatomy and Physiology

STUDIES OF THE BRAIN. 21 Mar 62 [14]p. 34 refs. JPRS: 13158.
Order from OTS or SLA $1.60 62-23576

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1961, v. 141, p. 461-463 and 505-508.

DESCRIPTORS: *Brain, Histology, *Electroencephalography, Conditioned reflex, *Drugs, *Chlorpromazine.

Contents:
Problem of the mechanisms of the action of aminazine and iminazine, by Yu. Ya. Geinisman
The electrical indices of the tuning-regulatory activity of the association parietal regions of the brain, by B. Kh. Gurevich.

Anikina, N. A.
STUDY OF THE MECHANISM OF CHEMORECAPTORS, Communication 4. [1962] 10p.
Order from K-H $12.50 K-H 11279-c

Trans. of #Byulletin' Eksperimental'noi Biologii [i Meditsiny] (USSR) 1961, v. 51 [no. 3] p. 18-23.

DESCRIPTORS: *Chemoreceptors, Sensory perception.

Cier, J. F., Lacour, J. R., and Cier, A.
MUSCULAR WORK AND ION EQUILIBRIA AT THE RAT. [1962] 19p. (2 figs. 3 tables Eng. summary omitted) 20 refs.
Order from SLA $1.60 62-14626

Trans. of Path[ologie et] Biol[ogie] (France) 1960, v. 8, no. 11/12, p. 1147-1154.

DESCRIPTORS: *Muscles, *Fatigue (Physiology), *Ions, Ion exchange, *Chemical equilibrium, Potassium, Sodium, *Electrolytes (Physiology).

Derevici, A. and Petrescu, A.
EFFECT OF WATER-SOLUBLE EXTRACT OF HONEY BEE ROYAL JELLY ON CERTAIN VIRUSES. [1961] 5p. 6 refs.
Order from OTS or SLA $1.10 62-13943

Trans. of #Voprosy Virusologii (USSR) 1960, v. 5, no. 5, p. 611-613.

DESCRIPTORS: *Viruses, Mitosis, *Embryos, Immunology, *Tumors.

Experiments on chick embryos show that the water-soluble fraction of the royal jelly of the honey bee has a destructive action on influenza virus types A PR8 and B even if only 2 mg of this fraction be added to the inoculum. The virus does not regenerate through the three subsequent passages in the allantoic fluid of the chick embryo. The chick embryos were not altered by the royal jelly and the chicks hatched out at the same time as those in the controls. The water-soluble fraction of royal jelly was inactive in relation to epidemic parotitis virus. Water-soluble extract of royal jelly injected with Ehrlich ascites tumour fluid in mice caused an increase in the number of degenerated cells, a reduction in the intensity of mitosis and amitosis and also in the normal of normal tumour cells. The oncolytic effect was also noted in smears prepared from ascitic fluid during the second passage of Ehrlich tumour with supplementary addition of the water-soluble extract of royal jelly. (Author)

Franck, U. F.
THE ANODIC BEHAVIOR OF IRON IN SULFURIC ACID: A CONTRIBUTION TO THE UNDERSTANDING OF THE OSTWALD-LILLIE NERVE MODEL. [1962] 18p.
Order from ATS $24.75 ATS-76P60G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1949, v. 4a, p. 378-391.

DESCRIPTORS: Anodes, Iron, Sulfuric acid, *Nervous system, *Electrolytes (Physiology), Anatomical models.

Grachev, I. I.
HIGHER NERVOUS ACTIVITY AND MILK SECRETION (Vysshaya Nervnaya Deyatel'nost i Sekretsiya Moloka). Apr 62 [21]p. 27 refs. RTS 2072.
Order from OTS or SLA $2.60 62-24360

Trans. of Leningrad U. Vestnik (USSR) 1958 [v. 13] no. 21 [Seriya Biologiya] no. 4, p. 110-124.

DESCRIPTORS: *Mammary glands, Secretion, *Milk, *Neurology cerebral cortex, *Conditioned reflex.

Variations in the yield and composition of the milk of goats were measured during the formation of positive and negative conditioned reflexes and after disruption of the higher nervous activity by clashing stimuli. Although some changes in milk yield accompanied reflex formation, these became less noted as reinforcement progressed. Disruption of the nervous processes in goats with a strong balanced type of nervous system effected only slight variations in milk yield and composition. Disruption was followed by a 50 to 70% reduction in milk secretion in the case of a goat with a strong unbalanced type of nervous system.

Khabarova, A. Ya.
THE AFFERENT INNERVATION OF THE HEART. May 62.
Order from CB $12.50

Trans. of mono. [Afferentnaya Innervatsiya Serdtsa, Moscow, 1961, 189p.].

DESCRIPTORS: *Heart, *Nerves, *Autonomic nervous system, *Histology, Biological stains.

Khrushchov, G. K. and Brodskii, V. Ya.
THE ORGAN AND THE CELL (SOME PROBLEMS OF CYTOLOGY AND HISTOLOGY). 20 Feb 62 [43]p. 72 refs. JPRS: 12650.
Order from OTS or SLA $4.60 62-19764

Trans. of #Uspekhi Sovremennoi Biologii (USSR) 1961, v. 52, no. 2(5) p. 181-207.

DESCRIPTORS: *Cells (Biology), *Tissues (Biology), *Liver, *Glands, Lungs, Intestine, *Histology, Anatomy.

Discussions are presented on (1) the structural-functional and cytological architectonics of an organ, and (2) the cell in the system of the organ's functional unit.

Liscia, G.
INFLUENCE OF TOBACCO ON THE BILE DUCT. [1962] 3p.
Order from K-H $3.75 K-H 3738-b

Trans. of Maroc-Méd[ical] (Morocco) 1954, v. 33, no. 351, p. 780.

DESCRIPTORS: *Tobacco, *Bile, *Liver.

Okamoto, Masaichi.
STUDIES ON THE INFLUENCE OF THE ARTICHOKE CYNARA SCOLYMUS ON LIVER AND KIDNEY FUNCTION. I. INFLUENCE OF ARTICHOKE DECOCTION ON SOCALLED CATARRHAL JAUNDICE (Studien über den Einfluss der Artischocke Cynara Scolymus auf Leberund Nierenfunktion. I. Einfluss des Artischokendekokts auf den sog. Katarrhalischen Ikterus) tr. by H. Norris. 29 Jan 51 [1]p.
Order from OTS or SLA $1.10 60-23118

Partial trans. (summary on p. 1052) of [Kyoto Furitsu Ikadaigaku Zasshi (Japan) 1940, v. 28, p. 1041-1052.

DESCRIPTORS: *Plants, Food, *Cholesterol, Blood, *Glutathione, *Bilirubin, Urine, Body weight.

Vladimirova, A. D.
REFLEX TEMPERATURE CHANGES IN THE MAMMARY GLAND DURING MILK EJECTION (O Reflektornykh Izmeneniyakh Temperatury Molochnoi Zhelezy v Protsesse Vydeleniya Moloka). Apr 62 [15]p. 20 refs. RTS 2071.
Order from OTS or SLA $1.60 62-24361

Trans. of Leningrad U. Vestnik (USSR) 1958 [v. 13] no. 15, Ser[iya] Biol[ogiya] no. 3, p. 125-132.

DESCRIPTORS: *Mammary glands, Milk, *Milk fat, Blood volume, Temperature.

When milk is withdrawn, a rise in temperature of 0.3 - 2° C is observed in both mammary glands, and the gland from which milk is withdrawn reaches a higher temperature. The higher the temperature of the udder, the higher the fat content of the milk, and the greater is the rate at which the milk is released. When successive small portions of milk are collected, changes in fat content run parallel to the increase in temperature. (Author)

Biochemistry

SOVIET DEVELOPMENTS IN BIOCHEMISTRY. 9 Apr 62 [233]p. 596 refs. JPRS: 13373.
Order from OTS or SLA $15.00 62-23840

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961, v. 6, no. 3, p. 244-267, 285-292, 305-313, 325-342.

DESCRIPTORS: *Biochemistry, *Nucleic acids, Snythesis, Molecular structure, Nucleotides, Polymers, Proteins, Enzymes, *Isotopes, Labeled substances, Ionization, *Radiation effects, *Biochemical genetics, *Mutations, *Chromosomes, *Drosophila, *Plants, Viruses, *Antibodies, *Hemoglobin, Diseases, *Tumors.

Contents:
Chemical aspects of life sciences, by V. A. Engelgardt
Mechanism of the biological synthesis of nucleic acids, by R. B. Khesin
Chemistry of nucleic acids -- DNA and RNA, by A. S. Spirin
Isotopes in biochemistry, by Ya. M. Varshavskii and others
Chemical mutagenesis, by S. I. Alikhanyan
Biochemistry of the hereditary diseases of man, by V. P. Efreinson
Some biochemical mechanism of hereditary and acquired immunity, by V. P. Efroimson
Experimental polyploidy; a method of creating new forms of plants by means of directed chemical alteration of heredity, by N. P. Dubinin
The nature of radiogenetic mutations and the problem of the effect of ionizing radiations on the heredity of man, by N. P. Dubinin
Biochemistry of the growth and development of malignant tumors.

Bernardini, L.
NICOTINE IN TOBACCO. [1962] 8p.
Order from K-H $10.00 K-H 3923-a

Trans. of Accad[emia Nazionale dei] Lincei. [Classe di Scienze Fiziche, Matematiche e Naturali. Rendiconti] (Italy) 1920 [ser. 5] v. 29, p. 62-66.

DESCRIPTORS: *Nicotine, Tobacco.

Bodechtel, G.
PAPER-CHROMATOGRAPHIC DETECTION OF PYRIDOXINE, PYRIDOXAMINE, NICOTINIC ACID AND NICOTINIC ACID AMIDE. [1962] 2p.
Order from K-H $2.50 K-H 9767-a

Trans. of Hoppe-Seyler's Zeitschrift für Physiologische Chemie (West Germany) 1956, v. 306, p. 143-144.

DESCRIPTORS: *Paper chromatography, Detection, *Pyridoxine, Amine, Amides, *Nicotinic acids, Vitamins.

Broglie, L. de.
PHYSICAL CHEMISTRY CONCERNING THE STUDY OF TOBACCO BY ELECTRON DIFFRACTION AND MICROSCOPY. [1962] 4p.
Order from K-H $5.00 K-H 8342-b

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1958 [v. 246] no. 7, p. 1040-1042 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Physical chemistry, *Tobacco, *Electron diffraction analysis, *Microscopy.

Chang, Chin.
EFFECT OF SOME SUBSTRATES AND BIOLOGICALLY ACTIVE COMPOUNDS ON THE RATE OF TURNOVER OF PHOSPHORUS COMPOUNDS IN CEREBRAL SLICES. [1962] [11]p. (3 figs. omitted) 25 refs.
Order from OTS or SLA $1.60 62-14727

Trans. of #Biokhimiya (USSR) 1960, v. 25 [no. 6] p. 1099-1104.
Another trans. is available from OTS or SLA $1.60 as 61-23058, NIH-4-37-61, 25 Apr 61 [13]p.

DESCRIPTORS: *Brain, *Phosphorus compounds, Determination, Metabolism

The addition to the incubation medium of glucose and fructose increases the consumption of oxygen and the turnover rate of phosphoproteins, phospholipids, and ribonucleic acid in the brain slices of rats. The addition to the medium of L-glutaminic acid, despite the increase in oxygen consumption, does not increase

turnover rate of phosphorus, of phosphoproteins, of phospholipids, and of RNA. Acetylcholine in a concentration of 1.10^{-2}M increases turnover rate of phosphorus, of phosphoproteins, of phospholipids, and decreases the turnover rate of RNA in brain slices, when added to incubation medium. The addition of y-aminobutyric acid does not affect the metabolism of phosphoproteins, of phospholipids, of RNA, and of lipoproteins in brain slices.

Chantrenne, H.
EFFECTS OF AN INHIBITOR OF THE CATALASE ON THE INDUCED FORMATION OF THAT ENZYME IN YEAST. [1962] 12p.
Order from K-H $15.00 K-H 5998-b

Trans. of Biochimica et Biophysica Acta (Netherlands) 1955, v. 16, p. 410-417.

DESCRIPTORS: *Catalase, Inhibition, Enzymes, *Yeasts.

Decker, K. H. Eberwein, Gries, F. A., and Bruhmuller, N.
ON THE DEGRADATION OF NICOTINE BY BACTERIAL ENZYMES. IV. L-6-HYDROXY-NICOTINE AS THE FIRST INTERMEDIATE. [1962] 31p.
Order from K-H $38.75 K-H 11325

Trans. of Biochemische Zeitschrift (West Germany) 1961, v. 334, p. 227-244.

DESCRIPTORS: Decomposition, *Nicotine, *Bacteria, *Enzymes, Hydroxides.

Decker, Karl, Gries, F. A., and Bruhmuller, Margaret.
DECOMPOSITION OF NICOTINE BY BACTERIA ENZYMES. III. METABOLISM STUDIES ON CELL-FREE EXTRACTS. [1962] 25p.
Order from K-H $31.25 K-H 11547-b

Trans. of Hoppe-Seyler's Z[eitschrift für] Phys[iologische] Chem[ie] (West Germany) 1961, v. 323, p. 249-263.

DESCRIPTORS: *Decomposition, *Nicotine, *Bacteria, Enzymes, Metabolism, Bacterial extracts.

Delva, V. A.
SILICON CONTENT IN THE HUMAN CEREBRAL CORTEX. [1962] [2]p.
Order from OTS or SLA $1.10 62-14716

Partial trans. (1 diagt. 1 table) of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1961, v. 52, [no. 8] p. 59-62.

DESCRIPTORS: *Cerebral cortex, *Silicon, Tissues (Biology)

Gershenovich, Z. S. and Krichevskaya, A. A.
AMIDE AND CARBOXYL GROUPS OF CEREBRAL PROTEINS IN VARIOUS FUNCTIONAL STATES OF THE ANIMAL. [1962] [17]p. 6 refs.
Order from OTS or SLA $1.60 62-14690

Trans. of #Biokhimiya (USSR) 1960, v. 25, no. 2, p. 310-317.

DESCRIPTORS: *Amides, *Carboxyl radicals, Nervous systems, *Brain, Oxygen, Pressure, Physiology, *Proteins.

In case of different disruptions in the function of the nervous system due to increased oxygen pressure, the correlation between the labile and firmly bound amide groups is changed. In the total cerebral proteins of rats subjected to a state of stimulation an increase in the quantity of amide groups and a corresponding decrease in the carboxyl groups is observed. A change in the correlation between the labile and firmly bound amide groups is an indirect indication of profound changes in the structure of the protein molecule under conditions of oxygen intoxication. (Author)

Hsu, Ting-seng.
THE MODE OF FORMATION OF GLUTAMINE FROM ASPARAGINE AND GLUTAMIC ACID IN ANIMAL TISSUES. [1962] [15]p. 7 refs.
Order from OTS or SLA $1.60 62-14691

Trans. of #Biokhimiya (USSR) 1959, v. 24, no. 3, p. 528-534.

DESCRIPTORS: Physiology, Biochemistry, *Glutamine, *Aspartic acid, *Glutamic acid, Coenzymes, Hydrolysis, *Tissues (Biology), Enzymes, Liver, Brain.

The fermentation system of reamidation was purified in order to investigate its properties. Experiments performed on the liver of pigeons, rats, and rabbits and on the brain of pigeons, did not confirm the existence of a reamidation. Further research indicated that the transformation of amide groups from asparagine into glutamine occurs in 2 stages, by a fermenting hydrolysis of asparagine with asparaginase with a subsequent utilization of ammonia to form glutamine of glutamine synthetase tissue.

Ivanov, N. and Paskaleva, K.
SOME METHODS FOR DETERMINING ENZYMES IN TOBACCO. [1962] 20p.
Order from K-H $25.00 K-H 11411-c

Trans. of Bulgar[ski] Tyutyun, 1960, v. 5, p. 150-154.

DESCRIPTORS: *Tobacco, *Enzymes, Chemical analysis.

Juul, Flemming.
PROOF THAT IRON AND o-DIPHENOL IS PRESENT IN THE COMPOUND WHICH COLORS POTATOES DARK. [1962] 5p.
Order from SLA $1.10 62-16166

Trans. from mono. Studies of the Blackening of Potatoes after Cooking, Copenhagen, 1949, chap 7.

DESCRIPTORS: *Potatoes, *Iron, *Phenols, Boric acids, Phosphates.

Khaykina, B. I. and Gonchorova, E. E.
METABOLISM OF DIFFERENT GLYCOGENS FRACTIONS IN THE BRAIN AND CERTAIN DATA ON ITS STRUCTURE. [1962] [13]p. 29 refs.
Order from OTS or SLA $1.60 62-14733

Trans. of mono. [Voprosy Biokhimii Nervnoi Sistemy] (Problems in the Biochemistry of the Nervous System) [ed. by] A. V. Palladin, Kiev, 1957, chap. 10, p. 107-117.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-18336 [1960] [10]p.

DESCRIPTORS: *Glycogen, *Metabolism, *Brain, Physiology, Anatomy, Stimulation, Inhibition.

A survey.

Khorkova, N. N.
RATE OF PHOSPHORUS INCLUSION OF NUCLEIC ACIDS INTO THE VARIOUS PROTEIN FRACTIONS OF BRAIN TISSUE. [1962] [16]p. 19 refs.
Order from OTS or SLA $1.60 62-14709

Trans. of #Biokh[imiya] (USSR) 1956, v. 21, no. 6, p. 709-714.

DESCRIPTORS: *Brain, Tissues (Biology), *Nucleoproteins, Proteins, *Nucleic acids, *Phosphorus, *Radioactive isotopes, Labeled substances, Penetration, Biochemistry.

The water, salt, alkali, and remaining fractions of proteins of the brain tissue contain in their structure nuclear proteides. The greatest number of nucleoproteides is found in the salt fraction of proteides. The nucleoproteides entering into the composition of the different protein fractions of brain tissue possess different rates of phosphorus renovation. The rate of phosphorus inclusion of RNA into the water fraction is 5 times as great as of RNA into the salt fraction. The rate of phosphorus inclusion of DNA in the water fraction is several times higher than in the salt fraction. The rate of phosphorus inclusion of RNA in the water and salt fractions is several times higher than the rate of inclusion of phosphorus of DNA in these same fractions. Phosphorus renovation of nucleic acids entering into the composition of the alkali fraction of proteins and the proteins of the remaining fraction are so insignificant that during an experiment lasting for 24 hours we were unable to discover any of it. For brain tissue the rate of phosphorus inclusion into the nuclear RNA is higher than into the cytoplasma. The rate of phosphorus inclusion of RNA into the nucleii and the cytoplasma is considerably higher than that of DNA. (Author)

Lovkova, M. Ya. and Il'in, G. S.
ON THE BIOSYNTHESIS OF THE PYRROLIDINE RING OF NICOTINE. [1962] 8p.
Order from K-H $10.00 K-H 11071-b

Trans. of #Biokhimiya (USSR) 1961, v. 26 [no. 1] p. 82-85.

DESCRIPTORS: *Biozynthesis, *Pyrroles, *Nicotine.

Polyakova, N. M. and Untina, N. A.
PHOSPHOGLUCOMUTASE ACTIVITY OF DIFFERENT REGIONS AND INTRACELLULAR BRAIN STRUCTURES. [1962] [4]p.
Order from OTS or SLA $1.10 62-14718

Partial trans. (tables only) of Voprosy Meditsinskoi Khimii (USSR) 1961, v. 7 [no. 5] p. 524-527.

DESCRIPTORS: *Phosphorylases, *Brain, Cells (Biology), Tissues (Biology).

Studer, A.
INFLUENCE OF DRUGS ON THE HISTOCHEMISTRY OF THE RAT'S ADRENAL MEDULLA (Einfluss von Pharmaka auf die Histochemie des Nebennierenmarkes der Ratte). [1962] [1]p.
Order from SLA $1.10 62-14357

Partial trans (abstract only) of Schweiz[erische] Med[izinische] W[ochen]schr[ift] 1961, v. 91 [no. 36] p. 1063.

DESCRIPTORS: *Drugs, *Adrenal glands, *Brain, Tissues (Biology), Rats, Amines, Reserpine, Chlorpromazine, *Tranquilizing drugs.

Tongur, A. M., Zaides, A. L. and others.
ELECTRON MICROSCOPE STUDY OF DNA. 13 June 62 [12]p. (11 figs. omitted) 28 refs. JPRS: 14140.
Order from OTS or SLA $1.60 62-25168

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 1, p. 140-144.

DESCRIPTORS: *Electron microscopy, Morphology, Molecules, *Nucleic acids, Radiation effects, *Ionization.

Contents:
Molecular morphology of deoxyribonucleic acid obtained by various methods
Change in the molecular morphology of deoxyribonucleic acid as a result of ionizing irradiation.

Vladimirova, E. A.
AMMONIA OF THE BRAIN AS A SPECIFIC BIOCHEMICAL INDICATOR OF THE FUNCTIONAL STATE OF THE CENTRAL NERVOUS SYSTEM. [1962] [25]p. 20 refs.
Order from OTS or SLA $2.60 62-14748

Trans. of mono. Biokhimiya Nervnoi Sistemy (Biochemistry of the Nervous System) Kiev, 1954, p. 47-62.

DESCRIPTORS: *Ammonia, *Brain, Nervous system, Quantative analysis, Conditioned reflex, Medical equipment, Physiology.

Benic, R.
INVESTIGATIONS ON THE DISTRIBUTION OF SOME PHYSICAL PROPERTIES OF WOOD IN THE STEM OF THE NARROW-LEAVED AND COMMON ASH (Istrazivanja o Rasporedu Nekih Fizickih Svojstava Drveta u Deblu Poljskog i Obicnog Jasena) tr. by Mladen Engelsfeld. 1962, 27p. 11 refs. PL-480 Agr.
Order from OTS $0.50 60-21653

Trans. of Glasnik za Sumske Pokuse (Yugoslavia) 1957, no. 13, p. 509-536.

DESCRIPTORS: Physical properties, *Wood, *Trees, Growth, *Density

On the basis of investigations on the distribution of several physical properties of wood in the stem of narrow-leaved ash from the Lipovljani forest district and common ash from the mountains Sljeme and Risnjak the following conclusions are drawn. The specific gravity of wood of the narrow-leaved and common ash increases from the periphery towards the center of the stem. This increase in the specific gravity is the consequence of the increase of annual ring width from the periphery to the center. The nominal specific gravity also increases from the periphery towards the tree center, and so does the over-dry specific gravity of wood. The volumetric shrinkage increases from the periphery towards the tree-center. The average volumetric shrinkage decreases in a longitudinal direction from the stump to the tree-top. In the transverse direction of the stem conformity exists between the annual ring width and the fibre-saturation point, as is the case between annual ring width on the one hand and specific gravity and volumetric shrinkage on the other: all these values increase mainly from the periphery towards the tree center (Fig. 22, 23, 24, 25) In the longitudinal direction of the stem the fibre-saturation point decreases from the stump towards the tree-top.

Chaze, J.
ON THE MODE OF CYTOLOGICAL FORMATION AND THE DETECTION OF ALKALOIDS IN THE TOBACCO SEEDLING. [1962] 7p.
Order from K-H $8.75 K-H 4072-b

Trans. of Bulletin d'Histologie [Appliquée et de Tecl.-nique Microscopique] (France) 1928, v. 5, June, p. 253-259.

DESCRIPTORS: *Tobacco, Plants, Cells(Biology), Synthesis, Detection, *Alkaloids, Histology.

Ciamician, G. and Ravenna, C.
ACTION OF A FEW ORGANIC SUBSTANCES ON PLANTS. [1962] 22p.
Order from K-H $27.50 K-H 5513-a

Trans. of Annales de Chimie (France) 1915, ser. 9, v. 4, p. 5-27.

DESCRIPTORS: *Plants, *Organic materials.

BIOTRON RESEARCH IN THE USSR. 12 Mar 62 [15]p. 7 refs. JPRS: 12918.
Order from OTS or SLA $1.60 62-23460

Trans of Nauka i Zhizn' (USSR) 1961 [v. 28] no. 12, p. 10-13 and Vrachebnoe Delo (USSR) 1961, no. 10, p. 22-26.

DESCRIPTORS: *Medical equipment, Air conditioning equipment, *Climatic factors, *Microorganisms, *Hypertension, Controlled atmosphere

Contents:
Biotron of Professor Panchenko, by Polina Seval'neva
Characteristics of the aeromicroflora of biotron wards, by L. V. Grigor'eva and S. L. Gertsriken.

BIOTRON RESEARCH IN THE USSR. 27 Mar 62 [22]p. 18 refs. JPRS: 13185.
Order from OTS or SLA $2.60 62-23643

Trans. of Vrachebnoe Delo (USSR) 1962, no. 1, p. 76-85 and 133-136.

DESCRIPTORS: *Nerves, Physiology, Therapy, *Radiation injuries, *Ionization, *Air conditioning equipment, Climatic factors.

Contents:
Some characteristics of the course of regeneration of a nerve trunk in biotron wards after acute radiation injury to the body, by D. I. Proniv
Ionization in the air conditioning system of the biotron, by Yu. A. Isakov.

HERALD OF THE ACADEMY OF MEDICAL SCIENCES, 1962, VOL. 17, NO. 3: SELECTED ARTICLES. 21 May 62 [54]p. 45 refs. JPRS: 13822.
Order from OTS or SLA $5.60 62-25016

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 3, p. 58-89.

DESCRIPTORS: Pharmacology, *Radioprotective drugs, Radiation injuries, *Physiology, Adjustment (Psychology), *Antarctic regions, Public health, *Arctic regions.

Contents:
Problems of pharmacological protection against radiation injuries, by Ya. Arbuzov
Some physiological changes in the human body during the course of acclimatization in the intracontinental regions of Antarctica, by I. Tikhomirov
Safeguarding human health under conditions of the Far North, by P. Rudnev and I. P. Novikov.

IMPROVE THE WORK OF THE MEDICAL INDUSTRY. 3 Apr 62 [7]p. JPRS: 13304.
Original copy poor quality; available on loan from OTS or SLA 62-23766

Trans. of Meditsinskaya Promyshlennost' SSSR, 1962, [v. 16] no. 1, p. 3-6.

DESCRIPTORS: *Medical equipment, *Drugs, Production, Buildings, Construction, *Instrumentation.

The Soviet people entered the year 1962 full of creative force and ready for new great achievements. The great ideals and tasks formulated in the new Program adopted by the Twenty-Second Congress of the CPSU are inspiring the Soviet people to new feats of labor in the name of the realization of plans for building a communistic society in the Soviet Union outlined by the Party. Like the entire Soviet people, under circumstances of great political and labor enthusiasm the hard workers of the medical industry are assuming increased socialistic responsibilities, are seeking out new forms of communist labor in order to contribute to the successful solution of the problem posed by the CPSU Program, satisfy fully the needs of the urban and rural population for all types of highly qualified medical care. (Extract)

INFORMATION ON POSTGRADUATE MEDICAL TRAINING AND MEDICAL PERSONALITIES IN CZECHOSLOVAKIA. 31 May 62 [21]p. JPRS: 13933.
Order from OTS or SLA $2.60 62-24999

Trans. of Lekarsky Obzor (Czechoslovakia) 1962, v. 11, no. 2, p. 105-112 and no. 3, p. 181-182.

DESCRIPTORS: *Medical personnel, *Education, Medical specialties, Conferences.

Contents:
Scientific Conference of the Slovak Institute for Postgraduate Medical Training (no. 1) Trencin, 8-9 Dec 61.
Listing of physicians granted specialty certificates from 1 Sep to 15 Dec 61
Listing of physicians granted specialty certificates from 6-31 Dec 61
Personalities (listing of birthday celebrants - Feb-Mar 62).

MEDICAL INDUSTRY OF THE USSR, 1962, NO. 2: [SELECTED ARTICLES]. 15 May 62 [12]p. 12 refs. JPRS: 13772.
Order from OTS or SLA $1.60 62-25011

Trans. of Meditsinskaya Promyshlennost' SSSR, 1962 [v. 16] no. 2, p. 15-19 and 62.

DESCRIPTORS: *Medical supplies, *Medical equipment, Industry, Plasma substitutes, *Dextran, Synthesis, Catalogs.

Contents:
Preparation of the blood substitute polyglucin by the method of controlled synthesis, Rept. 1, by T. V. Polushina and others
Medical instruments, devices, apparatus, and equipment: review of new catalogue, Moscow, 1961, by L. I. Faingol'd.

Anan'ev, M. G., Golubeva, I. V. and others.
PRELIMINARY DATA ON EXPERIMENTAL ELECTRONARCOSIS INDUCED WITH APPARATUS OF THE SCIENTIFIC RESEARCH INSTITUTE OF EXPERIMENTAL SURGICAL APPARATUS AND INSTRUMENTS (Predvaritel'nye Dannye po Eksperimental'nomu Primeneniyu Elektronarkoza Apparatom Nauchno-Issledovatel'skogo Instituta Eksperimental'noi Khirurgicheskoi Apparatury i Instrumentov). 1960, 13p. 13 refs. RSTP Ab-2267 60
Order from OTS or SLA $1.60 62-15071

Trans. of Eksperimental'na Khirurgiya [i Anesthesiologiya] (USSR) 1957 [v. 2] no. 4, p. 3-7.

DESCRIPTORS: *Bioelectronics, *Anesthesia, Medical equipment, *Surgery, *Physiology, Narcotics, Blood.
A pulsatile current with a frequency of 100 periods a second, a duration of one to 1.4 milliseconds in combination with a direct component, with an ocular-occipital arrangement of the electrodes (cathode on the eyes; anode on the occiput), an average current of 7-10 ma and a voltage of 35-40 volts produces complete tissue anesthesia of animals, permitting the performance of complex surgical procedures. Electronarcosis in dogs is obtained with a slow increase in the current. Over the course of 10-15 minutes the current is brought to about 1 ma, and thereby sleep is obtained in the animal. The current is then increased during the next 20 minutes to 4-5 ma (for the purpose of obtaining the narcotic phase). With the start of the operation the current is slowly increased to 7-13 ma (pulsating voltage of about 40 volts). The data confirm the possibility of obtaining a deep anesthesia of tissues through the use of the electronarcosis apparatus and the possibility of avoiding such side-effects as apnea, convulsions or mass movements. After the current is turned off, tissue anesthesia is maintained for 10-30 minutes. Electronarcosis does not produce deep irreversible changes in the vital functions of the organism. (Author)

Brey, J.
CASES OF ABORTION IN THE "KARL GUSTAV CARUS" OBSTETRICS AND GYNECOLOGY CLINIC DURING THE LAST FIVE YEARS AND THE INFLUENCE OF EXECUTIVE ORDER NO. 6 IMPLEMENTING THE MATERIAL AND CHILD RIGHTS AND PROTECTION LAW. 12 Jan 62 [20]p. JPRS: 11933.
Order from OTS or SLA $1.60 62-19728

Trans. of Deutsche Gesundheitswesen (East Germany) 1961, v. 16, no. 21, p. 972-977.

DESCRIPTORS: *Pregnancy, Vital statistics, Childbirth, *Inhibition, Control, *Public health, Education, Gynecology.

Bykov, R. E.
THE USE OF TELEVISION METHODS IN MEDICINE. 7 Mar 62 [15]p. 7 refs. JPRS: 12848.
Order from OTS or SLA $1.60 62-23389

Trans. of Vestnik Khirurgii (USSR) 1961, v. 87, no. 11, p. 11-16.

DESCRIPTORS: *Medicine, *Television, *X-rays, Diagnosis, Medical equipment, *Photofluorographic cameras

Flandre, O. and Damon, M.
MICROMETHOD OF DOUBLE DIFFUSION IN AGAR FOR THE STUDY OF THE ANTIGEN-ANTIBODY REACTION (Microméthode de Double Diffusion en Gélose pour l'Etude de la Réaction). [1962] 3p. 3 refs.
Order from SLA $1.10 62-16082

Trans. of Rev[ue] Franç[aise d']Étud[es] Clin[iques et] Biol[ogiques] (France) 1961, v. 6 [no. 7] p. 717-718.

DESCRIPTORS: Microscopy, *Slides, Culture media, *Antigens, *Antibodies, Chemical reactions.

A simple modification of the Crowle micro-method variant of the Ouchterlony technique is described. The method is rapid, giving results in 24 hours, and requires only 0.03 ml of immune-serum. Dried and colored slides can easily be kept and photographed. (Author)

Kositskii, G. I.
ELECTRONICS IN MEDICINE. 10 Apr 62 [9]p. JPRS: 13411.
Order from OTS or SLA $1.10 62-23822

Trans. of Zdorov'e (USSR) 1962 [v. 8] no. 2, p. 1-3.

DESCRIPTORS: *Electronics, *Medicine, Bioelectronics, *Medical equipment, *Electron microscopy, Analysis, Blood, Body fluids.

Liberman, A. E.
AN INSTRUMENT FOR THE CLINICAL STUDY OF PUPILLARY ORIENTATION AND PHOTOREACTION AND THE MOTION OF THE HUMAN EYEBALL AND EYELID. 16 Feb 62 [8]p. JPRS: 12596.
Order from OTS or SLA $1.10 62-19802

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 6, p. 846-848.

DESCRIPTORS: *Medical equipment. *Measurement, *Eye, *Light adaptation, Photosensitivity, *Motion, Reflexes, Photographic equipment.

Reeben, V.
ON THE USE OF ELECTRONICS IN MEDICINE. 1 June 62 [12]p. 5 refs. JPRS: 13961.
Order from OTS or SLA $1.60 62-25003

Trans. of [Zdravookhranenie Sovetskoi Estonii] (USSR) 1962, no. 1, p. 61-66.

DESCRIPTORS: *Medical equipment, *Electronic equipment, Electroencephalography, Electrocardiography, Diagnosis, Therapy.

A brief informative survey is given of the problems the experimental workshop of the Tartu State University has been dealing with, and certain new possibilities presented by electronics to medicine in the field of investigation and use of diopotentials are examined. The various electron apparatuses used in medicine are grouped as therapeutic apparatuses, and apparatuses for examination and diagnosis.

Teslenko, Zh. A.
A METHOD OF VECTORCARDIOGRAPHY DURING A MEDICAL STUDY OF SPORTSMEN. 29 May 62 [13]p. 4 refs. JPRS: 13918.
Order from OTS or SLA $1.60 62-24990

Trans. of Teoriya i Praktika Fizicheskoi Kul'tury (USSR) 1961, v. 24, no. 11, p. 867-870.

DESCRIPTORS: *Vectorcardiography, Medical equipment, *Medical examination, *Recreation, Man, Cardiac muscle, Electrocardiography.

The essence of this method consists in simultaneously recording two electrocardiographic connections in several planes. This makes it possible to register more precisely and fully the projection of the spatial vector of the electromotive force of the heart. As a result of the superimposition of two electrocardiographic connections applied to the horizontal and vertical plates of the electron beam tube the vectorcardiogram is recorded in the form of three loops QRS, T and P corresponding to ripples P, T and the complex QRS of the electrocardiogram. The study of normal VKGs of sportsmen and their comparison with the criteria of normal VKGs of persons not participating in sports has indicated that the differences involve the direction of recording of loop QRS and VA_1, the lengths of the axes of the QRS and T loops, the areas of loops QRS and nonjoining. The prevalence of recording of loops QRS and VA_1 in the clockwise direction in sportsmen is explained by the non-uniform envelopment by the excitation of the myocardium of the right ventricle due to youth. A special characteristic of VKGs of sportsmen is the enlargement of the axes, and areas of loops QRS which is related to the development of hypertrophy of the myocardium. VKGs of sportsmen are characterized by two variations of nonjoining of loops QRS and T, one of which may be due to the increased tonicity of the circulating nerve and the other due to the development of hypertrophy of the myocardium.

Microbiology

Baranowski, T., Przesmycki, F. and others.
THE BIOLOGY OF VIRUSES. 22 Dec 58 [210]p. (17 figs. omitted) 349 refs. JPRS Trans L-483-N.
Order from OTS or SLA $14.00 59-13180

Trans. of Zeszyty Problemowe Nauki Polskiej (Poland) 1956, no. 7, p. 9-40, 109-162, 199-233, 235-279.

DESCRIPTORS: *Viruses, Microorganisms, Molecules, Growth, *Cells (Biology), Biochemistry, Immunology, Virus diseases, Cytochemistry, *Electron microscopy.

Contents:
Virus as a macromolecule, by T. Baranowski
Development of the biological methods of virus research, by F. Przesmycki and H. Dobrowolska
Viral development in cell, by F. Przesmycki
Methods of virus isolation, by K. Zakrzewski
Immunochemistry of viruses, by E. Mikulaszek

Ivanova, L. G., Sergeeva, T. I. and others.
DRY MEDIUM FOR DIAGNOSIS OF ALIMENTARY INTOXICATIONS DUE TO CLOSTRIDUM BOTULINUM AND CLOSTRIDIUM PERFRINGENS. 6 June 62 [13]p. 6 refs. JPRS: 14033.
Order from OTS or SLA $1.60 62-25050

Trans. of Laboratornoe Delo (USSR) 1962 [v. 8] no. 4, p. 33-36.

DESCRIPTORS: *Culture media, Bacteria, *Clostridium botulinum, *Clostridium perfringens, Toxicity, *Botulism.

A dry KPD medium was obtained which is suitable for diagnosis of alimentary intoxications due to Cl. botulinum, types A, B, C, E, and Cl. perfringens, types A, B, C, D, E, F. The growth and toxinoformation of the above causative agents were the same as in the usual nutrient media employed for growing of these microbes. The simplicity of preparation of the KPD medium from its dry form permits its utilization in any laboratory. The medium is convenient for storage and transportation. (Author)

Ivanovics, Gyorgy.
MEGACIN AND OTHER BACTERIOCIN-TYPE SUBSTANCES. 5 Dec 61 [24]p. JPRS: 11318.
Order from OTS or SLA $2.60 62-19682

Trans. of Orvosi Hetilap (Hungary) 1961, v. 102, no. 23, p. 1063-1071.

DESCRIPTORS: *Bacteria, Growth, Genetics, *Bacteriophages, Bactericides, Lysines, *Proteins, Amino acids, Synthesis, Viruses.

A protein-like substance, designated as megacin, was isolated from cultures of Bacillus megaterium. Megacin has a bactericidial effect on all strains of B. megaterium, including the megacinogenic strains. It contains 18 different amino acids. Megacinogenic strains were found in about half the B. megaterium strains isolated from soils. Ultraviolet radiation caused all megacin-producing strains to become megacinogenic. Megacinogenesis is a transmissible lethal factor. The "lethal gene" is transferred during cell division. This transmissible factor is assumed to be a prophage with defective properties. Megacin, synthesized by the bacteria, is considered to be a completely new protein, that was non-existent in the bacterial cells. It does not occur in normal bacterial growth, but is the result of a lethal biosynthetic process that can be induced by external influences (UV radiation). Megacinogenesis is similiar to lysogenesis, but differs from it in that the dissolution of the megacin strains is not accompanied by the liberation of infective particles, but by the formation of the bacteriocidal protein, megacin. Megacinogenesis is regarded as an incomplete virus synthesis.

Klimova, T. E.
OBSERVATION OF PSEUDOTUBERCULOSIS INFECTION IN WILD RODENTS; GREY RATS AND DOMESTIC MICE UNDER NATURAL CONDITIONS (Obnaruzhenie Psevdotuberkuleznoi Infektsii u Dikikh Gryzunov -- Serykh Krys i Domovykh Myshei v Prirodnykh Usloviyakh). [1961] [21]p. 10 refs.
Order from OTS or SLA $2.60 62-13992

Trans. of [Gosudarstvennyi Nauchno-Issledovatel'skii] Protivochumnyi Institut. Trudy (USSR) 1956 [v. 10] p. 149-165.

DESCRIPTORS: Rodents, Mice, Rats, *Infections, Diseases, Tuberculosis, *Culture media, Separation, Bacteria, Pathology.

Krysicka-Doczkal, Halina and Skassa, Maria.
SOME PHARMOCOLOGICAL PROPERTIES OF PYROGEN FROM SERRATIA MARCESCENS (Niektore Wlasciwosci Farmakologiczne Pirogenu z Serratia Marcescens). 30 Aug 61 [13]p. JPRS: 9994.
Order from OTS or SLA $1.60 62-19571

Trans. of Medycyna Doswiadczalna i Mikrobiologia (Poland) 1961, v. 13, no. 2, p. 135-140.

DESCRIPTORS: *Pyrogens, *Pharmacology, *Intestinal bacteria, Escherichia, Salmonella, Inflammation, Temperature, Reaction (Psychology), Tissues (Biology)

Pyrogen from Serratia mercescens is less toxic, but more pyrogenous than the ones used so far. This pyrogen evokes an eosinopenia connected with an overall leukocytosis. Its influence on tissue permeability was not confirmed. After incubation with homologic serum it increases oxygen consumption of the liver tissue, but after incubation with heterologic serum it does not exert this effect. The rise in body temperature is invariably accompanied by leukocytosis; other consequences of pyrogen injection are independent of its pyrogenic activity. (Author)

Sergeeva, N. A. and Somova, N. M.
CASES OF ISOLATION OF PSEUDOTUBERCULOSIS RODENTIUM FROM THE FIELD MOUSE AND THE COMMON SMALL FIELD MOUSE [MICROTUS ARVALIS L.] (Sluchai Vydeleniya Psevdotuberkuleza Gryzunov ot Polevoi Myshi i Obyknovennoi Polevki). [1961] 2p.
Order from OTS or SLA $1.10 62-13991

Trans. of Gosudarstvennyi Nauchno-Issledovatel'skii Protivochumnyi Institut. Trudy (USSR) 1956, v. 10, p. 166.

DESCRIPTORS: Mice, *Infections, Diseases, Tuberculosis, *Culture media, Separation, Bacteria, Pathology.

Tinker, I. S. and Elfimova, A. I.
PHAGOCYTIC ACTIVITY OF LEUCOCYTES WITH REGARD TO THE TULAREMIA BACILLUS (Fagotsitarnaya Aktivnost' Leikotsitov k Tulyaremiinomu Mikrobu). [1961] 6p.
Order from OTS or SLA $1.10 62-15002

Trans. of [Gosudarstvennyi Nauchno-Issledovatel'skii] Protivochumnyi Institut. Trudy (USSR) 1956 [v. 10] p. 200-204.

DESCRIPTORS: *Phagocytosis, *Leukocytes, *Tularemia, *Pasteurella, Blood, Cells (Biology), Infections, Bacteria, Immunization.

Pathology

MILITARY-MEDICAL JOURNAL, 1961, NO. 11.
2 Mar 62 [176]p. JPRS: 12766.
Order from OTS or SLA $12.50 62-23351

Trans. of Voenno-Meditsinskii Zhurnal (USSR) 1961, no. 11, p. 3-97.

DESCRIPTORS: *Military medicine, *Battle injuries, *Stomach, Mucus membranes, Inflammation, *Digestive system, Diseases, Diagnosis, Vitamin B, Immunology, *Amoebic dysentery, Infections, Microbiology, Microscopy, Gas masks, Protective clothing, Underwater clothing, *Clostridium tetani, Phenothiazine derivatives, Barbiturates, Therapy, Wounds, Surgery, Military hospitals, *Blood transfusions, Surgical trauma, Traumatic shock, *Burns, *Eye, Radar operators, Selection, Motor reactions, Medical laboratories, Medical equipment, *Bone fracture, Medical personnel, Conferences.

Important problems of the military medical service, by D. D. Kuvshinskii
Words of delegates of the twenty-second Congress of the CPSU toward new progress in perfecting the medical care of the army and navy
Sorting of the internal medical group of afflicted, by G. P. Shul'tsev
Treatment of combined combat injuries including the chemical factor, by B. V. Serikov
Some problems of prophylaxis and treatment of gastritis, by N. S. Molchanov
Prospects of using a combined method of functional diagnosis of gastric diseases, by A. I. Peskin
The problem of the condition of the acid-producing function of the stomach in healthy persons, by V. I. Timofeev
The vitamin B_2 content in certain diseases of the digestive organs, by M. T. Budagovskii
Further study of the immunological effectiveness of comprehensive inoculations, by V. D. Belyakov and others
Study of the phage titer increase reaction for the diagnosis of dysentery, by S. I. Zhilin
The use of luminescence microscopy in microbiology, by A. I. Yakovlev and A. I. Igumnov
Improvement of the method of investigating the gas content of inhaled air with the use of a gas mask, by P. A. Gul'tyaev
Characteristics of work in soft protective clothing (without an obligatory microclimate) on dry land and under water, by N. A. Matyushkina and A. M. Tikhonov
Treatment of tetanus with phenothiazine derivatives in combination with barbiturates, by N. K. Semenov
Experience in surgical operations in the comprehensive treatment of terminal states, by V. I. Pavlov
Management of the terminal state under conditions of the military hospital, by L. N. Aryaev
Experience in the prophylaxis and treatment of shock in patients under hospital conditions, by E. V. Pogarev and K. G. Tatatadze
Epidural block as a method of treatment of lumbosacral radiculitis, by V. K. Romanov
The treatment of severe thermal burns of the eyes, by B. N. Bartsevich
Method of selecting radar station operators by sensorimotor reactions, by N. T. Atrochkin
Some portable articles of bacteriological and virological laboratories, by V. P. Blokhov and N. D. Alekseenko
Pneumatic holder for Pasteur pipets, by A. K. Adamov and A. I. Stepanov
The medical service of Soviet army troops in the defense of Sevastopol', by A. P. Ivanov
The latest in the organization and tactics of the combat group medical service of the American Infantry Division, by L. I. Baukin
The problem of treating long-bone fractures, by O. L. Dobrzhanskii
Practical Scientific Conference of Physicians of the Turkestan Military District, by R. M. Litvinenko

Ahn, Bertil von.
AN ELECTROCARDIOGRAPHIC INVESTIGATION OF THE EFFECT OF TOBACCO SMOKE ON THE HEART IN DIFFERENT DEGREES OF SMOKERS, II. [1962] 25p.
Order from K-H $31.25 K-H 6918-b

Trans. of Svenska Läkartidningen, 1947, v. 44, p. 785-804.

DESCRIPTORS: *Tobacco, *Smokes, *Heart, *Electrocardiography.

Annugli, Raffaele.
EXOGENOUS FACTORS IN THE ETIOLOGY OF TUMORS. [1962] 91p.
Order from K-H $113.75 K-H 11234

Trans. of Ann[ali della] Sanità Pubblica (Italy) 1960, v. 21, p. 1395-1444.

DESCRIPTORS: *Tumors, *Etiology, Metabolism.

Arnol'di, I. A. and Belousova, A. Z., eds.
HYGIENIC PROBLEMS OF ACCLIMATIZATION OF THE POPULATION IN THE FAR NORTH: SELECTED CHAPTERS. 22 June 62 [97]p. 43 refs. JPRS: 14225.
Order from OTS or SLA $8.60 62-25493

Trans. of mono. Gigienicheskie Voprosy Akklimatizatsii Naseleniya na Krainem Severe, Moscow, 1961, p. 7-22, 50-61, 91-100, 112-130, 134-141, 232-244.

DESCRIPTORS: *Arctic regions, Public health, Physical fitness, Ultraviolet radiation, Biochemistry, Etiology, *Diseases, Vitamins, Intestine, Nervous system, Muscles, Children.

Contents:
Hygienic problems of acclimatization of the population in the Far North
Ultra-violet irradiation as a factor of acclimatization to the far north

Materials on the evaluation of the state of health and physical development of schoolchildren in Noril'sk
Materials for the evaluation of the state of health of the Noril'sk population
Clinical and biochemical manifestations of hypovitaminoses in inhabitants of the Polar Region
The etiology of intestinal diseases in young children in Noril'sk
Diseases of the neuromuscular apparatus in workers in the Noril'sk mining industry.

Atakhanov, E. I.
THE CONGRESS [OF THE CPSU] (NO. 22) AND SCIENTIFIC RESEARCH WORK IN MEDICINE IN UZBEKISTAN. 21 May 62 [25]p. JPRS: 13824.
Order from OTS or SLA $2.60 62-25009

Trans. of Meditsinskii Zhurnal Uzbekistana (USSR) 1962, no. 1, p. 3-12.

DESCRIPTORS: *Medicine, Scientific research, *Public health.

Avdzhiev, G., Koen, R. and others.
A WATER-BORNE TYPHOID FEVER EPIDEMIC IN BULGARIA. 22 Mar 62 [10]p. JPRS: 13114.
Order from OTS or SLA $1.10 62-23600

Trans. of Khigiena [Epidemiologiya i Mikrobiologiya] (Bulgaria) 1961, v. 4, no. 2, p. 21-24.

DESCRIPTORS: *Typhoid, *Epidemiology, Intestinal bacteria, Bacteriophages, Water supplies, Bulgaria.

Bernasconi, Paul.
TABAGISM AND ARTERITIS OF THE LOWER LIMBS. [1962] 3p.
Order from K-H $3.00 K-H 8619-b

Trans. of Algérie Médicale (Algeria) 1957, v. 61, no. 12, p. 1297-1298.

DESCRIPTORS: *Tobacco, Etiology, Inflammation, *Arteries, *Diseases, Legs.

Blümlein, H.
ON THE CAUSAL PATHOGENESIS OF LARYNGEAL CANCER UNDER CONSIDERATION OF TOBACCO SMOKING. [1962] 100p.
Order from K-H $125.00 K-H 5009-b

Trans. of Archiv für Hygiene und Bakteriologie (West Germany) 1955, v. 139, no. 5, p. 349-404.

DESCRIPTORS: Etiology, Pathology, *Cancer, *Larynx, *Tobacco, Smokes, Cigarettes.

Bouchard, J. and May, Raoul M.
THE EFFECTS OF TOBACCO TARS IN SUBCAPSULAR GRAFTS OF THE LUNG IN THE MOUSE. [1962] 31p.
Order from K-H $38.75 K-H 11095-b

Trans. of Arch[ives d']Anat[omie] Micr[oscopique et de] Morph[ologie] Exp[érimentale] (France) 1960, v. 49, p. 307-332.

DESCRIPTORS: *Tobacco, *Transplantation, *Surgery, Mice.

Breitinger, Helmut.
THE INFLUENCE OF NICOTINE ON THE BALLISTOCARDIOGRAM OF HEALTHY PERSONS AND PATIENTS WITH CIRCULATORY DISTURBANCES. [1962] 8p.
Order from K-H $10.00 K-H 5892

Trans. of Archiv für Phys[ikalische] Therapie [Balneologie und Klimatologie] (East Germany) 1956, v. 8, p. 262-272.

DESCRIPTORS: *Nicotine, *Ballistocardiography, Diseases, Circulatory system, Physiology.

Butusov, V. S.
ON THE HARM OF TOBACCO SMOKING (BACKGROUND FOR SANITARY-EDUCATIONAL WORK). [1962] 4p.
Order from K-H $5.00 K-H 3225-a

Trans. of Fel'dsher i Akusherka (USSR) 1954, no. 2, p. 45-46.

DESCRIPTORS: *Tobacco, Smokes, *Pathology, Cigarettes, Public health.

Caselli, Patrio.
DOCTRINAL AND PRACTICAL ASPECTS OF THE MODERN CONCEPT OF INFLAMMATION. [1962] 10p.
Order from SLA $1.10 62-14981

Trans. of il Progresso Medico (Italy) 1960, v. 16, no. 9, p. 265-274.

DESCRIPTORS: *Inflammation, Reaction, (Psychology), *Tissues (Biology), Leukocytes, Phagocytosis, *Injuries, *Infections, Pathology.

Chalvet, H. and Chalvet, O.
THEORETICAL CHEMISTRY-APPLICATION OF THE GRAPHIC TABLES METHODS TO THE STUDY OF THE CANCEROGENIC PROPERTIES OF 3, 4, 9, 10-DIBENZOPYRENE. [1962] 2p.
Order from K-H $3.00 K-H 5756-b

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1955, v. 240, no. 11, p. 1221-1223 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Benzyl radicals, *Cancer, *Biochemistry, Tables.

Chiurco, G. A.
CLINICAL-SOCIAL ASPECTS OF PRECANCEROUS AND PULMONARY CANCEROUS CASES. [1962] 15p.
Order from K-H $19.55 K-H 11053-a

Trans. of Acta Medicinae Legalis et Socialis (Belgium) 1959, v. 12, no. 3/4, p. 147-155.

DESCRIPTORS: Attitudes, *Adjustment (Psychology), *Cancer, *Lungs, Therapy, Sociology.

Chiuzzi, A.
MEDICO-SOCIAL REFLECTIONS OF TOBACCO POISONING. [1962] 30p.
Order from K-H $27.50 K-H 8650-a

Trans. of Acta Medicinae Legalis et Socialis (Belgium) 1957, v. 10, no. 4, p. 577-593.

DESCRIPTORS: *Tobacco, *Poisoning, *Medicine, *Sociology.

Chu, Kuei-ching, Ha, Fen-hau and others.
A SURVEY OF 100 CASES OF BRONCHOGENIC CARCINOMA. [1962] 28p.
Order from K-H $35.00 K-H 9396-b

Trans. of [Chung Hua Chieh Ho Ping K'o Tsa Chih] (Chinese People's Republic) 1959, no. 2, p. 92-98.

DESCRIPTORS: *Cancer, *Lungs, Respiratory diseases.

Clay, A. and Biserte, Gerard.
THE ROLE OF THE ENVIRONMENT IN THE ETIOLOGY OF PULMONARY CANCER: ETIOLOGICAL CONSIDERATIONS AND BIOLOGICAL CONSIDERATIONS. [1962] 48p.
Order from K-H $65.00 K-H 9561-b

Trans. of Cancerologie (France) 1957, v. 3, no. 3, p. 63-75.

DESCRIPTORS: Ecology, *Etiology, *Cancer, *Lungs, Biology, Pathology.

Cruz, A. F.
CARCINORESISTANCE AND CARCINOSUSCEPTIBILITY. [1962] 38p.
Order from K-H $47.50 K-H 5448-b

Trans. of Folia Clinica Internacional (Spain) 1956, v. 6, p. 61-72.

DESCRIPTORS: *Cancer, Resistance, Sensitivity.

Delarue, J. and Chomette, G.
CONTRIBUTION TO THE STUDY OF MALPIGHIAN METAPLASIAS OF THE BRONCHIAL MUCOUS MEMBRANE. [1962] 55p.
Order from K-H $68.75 K-H 9667

Trans. of Ann[ales] d'Anatom[ie] Pathol[ogique] (France) 1956, [n. s. v. 1] no. 3, p. 299-328.

DESCRIPTORS: *Lungs, *Pathology, *Mucous membranes, Tissues (Biology).

Denoix, P.-F. and Gelle, X.
ESTIMATION OF THE COMPARATIVE IMPORTANCE OF BRONCHOPULMONARY CANCER IN FRANCE AND IN OTHER COUNTRIES. [1962] 36p.
Order from K-H $45.00 K-H 6871-b

Trans. of Assoc[iation] Francaise pour l'Étude du Cancer. Bull[etin] 1955, v. 42, p. 247-278.

DESCRIPTORS: Vital statistics, *Cancer, *Lungs, France.

Denoix, Pierre, Schwartz, Daniel, and Anguera, Georges.
THE FRENCH INVESTIGATION ON THE ETIOLOGY OF BRONCHOPULMONARY CANCER. [1962] 62p.
Order from K-H $77.50 K-H 8619-d

Trans. of Association Française pour l'Étude du Cancer. Bulletin, 1958, v. 45, Jan/Mar, p. 1-37.

DESCRIPTORS: Etiology, *Cancer, Lungs, *Respiratory system.

Efuni, Yu. N., Tran Kh'yu Tuck and others.
PORTABLE LUMINESCENT ILLUMINATOR [AND] A CASE OF CHLOROMA, OR THE GREEN CANCER OF ARAN. 31 May 62 [8]p. 12 refs. JPRS: 13927.
Order from OTS or SLA $1.10 62-24996

Trans. of Vestnik Oto-Rino-Laringologii (USSR) 1962 [v. 24] no. 2, p. 89-91 and 96-97.

DESCRIPTORS: *Otorhinolaryngology, *Medical equipment, Mercury lights, Ultraviolet equipment, Diagnosis, Mirrors, *Cancer, Tumors, *Leukemia.

Franke, H. and Schroder, J.
ON THE PROBLEM OF THE EFFECT OF SMOKING ON THE PERIPHERAL VASCULAR SYSTEM IN HEALTHY AND DISEASED INDIVIDUALS. [1962] 44p.
Order from K-H $55.00 K-H 5322-b

Trans. of Deut[ches] Archiv für Klin[ische] Med[izin] (West Germany) 1955, v. 202, p. 320-346.

DESCRIPTORS: *Tobacco, Smokes, Cigarettes, Etiology, *Circulatory system, Pathology, Diseases.

Fuchs, Gunter.
STATISTICAL INVESTIGATIONS OF THE ETIOLOGY OF BRONCHIAL CARCINOMA. [1962] 10p.
Order from K-H $12.50 K-H 6049-b

Trans. of Deut[sches] Med[izinisches] J[ournal] (West Germany) 1956, v. 7, no. 5/6, p. 138-140.

DESCRIPTORS: *Cancer, *Respiratory system, Etiology.

Haimbock, K.
THE INFLUENCE OF SMOKING ON THE RETINAL ARTERIAL PRESSURE OF HEALTHY EXPERIMENTAL PERSONS. [1962] 10p.
Order from K-H $12.50 K-H 11548-c

Trans. of Wiener Klin[ische] Wochen[schrift] (Austria) 1961, v. 73, no. 31/32, p. 529-531.

DESCRIPTORS: *Tobacco, *Retina, *Arteries, Blood pressure.

Hirvonen, Leo [Paavilainen, T. O., and Peltonen, T.]. [CIGARETTE SMOKING AND PHYSICAL PERFORMANCE]. [1962] 14p.
Order from K-H $17.50 K-H 11340

Trans. of Sotilaslaak[etieteellinen] Aika[kauslehti] (Finland) 1961, v. 36, p. 5-15.

DESCRIPTORS: *Cigarettes, *Tobacco, *Physical fitness.

Hirvonen, Leo, Paavilainen, T. O. A. and others.
SMOKING AND VASOCILATION CAUSED BY TOPICAL HEAT APPLICATIONS. [1962] 11p.
Order from K-H $13.75 K-H 11433-b

Trans. of Sotilaslaak[etieteellinen] Aikak[auslehti] (Finland) 1961, v. 36, p. 69-78.

DESCRIPTORS: *Tobacco, Cigarettes, *Blood vessels, Dilatation, Heat treatment.

Jung, H. D.
THE DERMATOMYCOSES AND THEIR CURRENT STATUS AS A PROBLEM FOR MEDICINE AND VETERINARY MEDICINE. 20 Nov 61 [43]p. 2 refs. JPRS: 11183.
Order from OTS or SLA $4.60 62-19723

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 9, p. 329-338.

DESCRIPTORS: *Skin, *Fungus infections, Diseases, Fungicides, *Veterinary medicine, *Medicine.

Kaufmann, H. and Bensimon, Lucien.
WEANING FROM TOBACCO. [1962] 3p.
Order from K-H $3.75 K-H 11153-b

Trans. of la Vie Médicale (France) 1960, v. 41, p. 1139-1140.

DESCRIPTORS: *Tobacco, Cigarettes.

Keil, R.
A FEW REMARKS ON CANCER STATISTICS. Sep 60, 4p.
Order from K-H $5.00 K-H 10177-c

Trans. of Z[eitschrift für] Ärztl[iche] Fortbild[ung] (East Germany) 1960, v. 54, no. 4, p. 214-215.

DESCRIPTORS: *Cancer, *Statistical data.

Kereev, N. I. and Badaker, S. Ya.
ALL-UNION CONFERENCE ON THE REDUCTION AND LIQUIDATION OF INFECTIOUS DISEASES (NO. 2). 4 Apr 62 [6]p. JPRS: 13376.
Order from OTS or SLA $1.10 62-23821

Trans. of Zdravookhranenie Kazakhstana (USSR) 1961, v. 21, no. 12, p. 59-61.

DESCRIPTORS: *Conferences, Public health, *Infections, *Diseases, *Countermeasures, Inhibition, Immunization.

Komczynski, Ludwik.
MORPHOLOGICAL CHANGES IN THE ORGANS OF MICE UNDER THE INFLUENCE OF TOBACCO SMOKE. Feb 61, 82p.
Order from K-H $102.50 K-H 10401-b

Trans. of [Akademia Medyczna. Roczniki] (Poland) 1958, suppl. 2.

DESCRIPTORS: *Tobacco, Smokes, *Morphology, *Anatomy, Mice, Cigarettes.

Korner, W.
POST-OPERATIVE STOMACH AND INTESTINAL ATONIA IN HABITUAL SMOKERS. [1962] 10p.
Order from K-H $12.50 K-H 11095-f

Trans. of Deutsch[e] Gesundh[eitswesen] (East Germany) 1961, v. 16 [no. 1] p. 9-11.

DESCRIPTORS: *Myotonia, *Stomach, *Intestine, *Tobacco.

Lambaise, Mario and Serra, Carlos.
SMOKING AND THE NERVOUS SYSTEM. I. MODIFICATIONS OF THE CORTICAL ELECTRICAL ACTIVITY FROM SMOKING. [1962] 16p.
Order from K-H $20.00 K-H 9054-d

Trans. of Acta Neurologica (Italy) 1957, v. 13, no. 4, p. 494-506.

DESCRIPTORS: *Tobacco, Cigarettes, *Nervous system, Cerebral cortex, *Electroencephalography.

Lecoq, Raoul.
SOME OBSERVATIONS ON NICOTINIC DETOXICATION. [1962] 13p.
Order from K-H $16.25 K-H 3440-a

Trans. of Thérapie (France) 1954, v. 9, no. 4, p. 450-455.

DESCRIPTORS: *Nicotine, *Toxicity, Poisons.

Lickint, F.
A CONTRIBUTION TO THE DETERMINATION OF THE NICOTINE EXCRETION IN THE URINE AFTER THE USE OF TOBACCO. [1962] 8p.
Order from K-H $10.00 K-H 5339-c

Trans. of die Pharmazie (Germany) 1956, v. 11, p. 39-42.

DESCRIPTORS: *Nicotine, *Tobacco, Cigarettes, *Urine, Excretion, Chemical analysis.

Lickint, F.
SMOKING AND CARCINOMA. [1962] 5p.
Order from K-H $6.25 K-H 5339-b

Trans. of der Tuberkulosearzt (West Germany) 1956, v. 10, p. 105-107.

DESCRIPTORS: *Tobacco, Cigarettes, *Cancer.

Mansurov, Kh. Kh.
BASIC AND DISPUTED PROBLEMS IN THE THEORY OF THE SO-CALLED COLLAGEN DISEASES. 21 May 62 [10]p. JPRS: 13799.
Order from OTS or SLA $1.10 62-24719

Trans. of Zdravookhranenie Tadzhikistana (USSR) 1962 [v. 9] no. 1, p. 3-9.

DESCRIPTORS: *Collagen, *Diseases, Pathology, Tissues (Biology), Classification, Diagnosis.

Müller, Emma.
[PATHOLOGICAL-ANATOMICAL STUDIES EXAMINATIONS OF AMYLOIDS IN VIEW OF NEW RESEARCH RESULTS]. [1962] 22p.
Order from SLA $2.60 62-10857

[Partial trans. of unidentified mono. doctoral thesis from the University of Würzburg, 1955].

DESCRIPTORS: *Kidneys, Disease, *Amyloidosis, Anatomy, *Histology, Biological stains.

The material included 11 autopsy cases of generalized and typical amyloidosis which came to autopsy between the years of 1947 to 1953 in the University of Würzburg. These 11 cases do not include any cases of plasmocytoma, that means multiple myeloma. And there are no cases of paramyloid and there are no cases of atypical amyloidosis. In the detail the histological examinations are limited mainly to the examination of the kidney. (Author)

Nadgornaya, N. I. and Vinogradskaya, M. A.
ELECTRON MICROSCOPY OF LEUKOCYTE EXTRACTS FROM HUMAN LEUKOSIS PATIENTS. [1961] 7p. 12 refs. NIH Ab-650.
Order from OTS or SLA $1.10 62-15102

Trans. of Voprosy Onkologii (USSR) 1956, v. 2, no. 5, p. 528-532.

DESCRIPTORS: *Leukocytes, Leukemia, Diseases, *Virus diseases, Tissue culture, *Electron, Microscopy.

Electron micrographs revealed virus-like particles in the leukocytes of leukotic patients. The globular formations ranged in size from 50 to 150 millimicrons. They were seen in 33 to 40 cases examined, but were sometimes discovered only after cultivating the leukocytes in vitro. Evidence for a viral origin of leukosis is not yet conclusive.

Pestel, Maurice.
TOBACCO, ITS MISDEEDS AND ALSO THE ART OF FIGHTING THEM. [1962] 21p.
Order from K-H $26.25 K-H 10938-c

Trans. of la Presse Médicale (France) 1960, v. 68, no. 58, p. 2318-2321.

DESCRIPTORS: *Tobacco, Pathology.

Rossmann, P.
CASE OF DOUBLE CARCINOMA OF THE LUNGS IN A HEAVY SMOKER. [1962] 12p.
Order from K-H $15.00 K-H 10177-d

Trans. of Rozhl[edy v] Tuberk[ulose a v Nemocech Plicnich] (Czechoslovakia) 1960, v. 20, no. 2, p. 116-121.

DESCRIPTORS: *Cancer, *Lungs, *Tobacco, Cigarettes.

Samsonov, V. A.
ATHEROSCLEROSIS AS REFLECTED IN THE AUTOPSY DATA OF PETROZAVODSK. 3 May 62 [12]p. 19 refs. JPRS: 13640.
Order from OTS or SLA $1.60 62-24384

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 2, p. 37-42.

DESCRIPTORS: *Arteriosclerosis, *Vital statistics, Urban areas, Age factor.

A study was made of 1,705 protocols of post mortem examinations taken from the autopsy records of Petrozavodsk covering the period 1951 through 1958; the ages of the deceased ranged from 21 to 104 (926 men and 779 women). Among primary diseases with a fatal outcome, cardiovascular disease headed the list with 28.2%, followed by neoplasm - 23.2% and tuberculosis - 17.2%. The observations which have been made show that the incidence of atherosclerosis and its complications, as reflected in the autopsy data of Petrozavodsk, does not differ substantially from that of the corresponding data for Leningrad and a number of other cities in the Soviet Union.

Slinin, S. M.
SMOKING AND HEALTH [Kurenie i Zdorov'e]. [1962].
Order from K-H $10.00 K-H-10764-e

Trans. of Klin[icheskaya] Med[itsina] (USSR) 1960, v. 38 [no. 10] p. 105-109.
Another trans. is available from OTS $0.50 as 61-11836, JPRS-7321, 20 Dec 60, 8p.

DESCRIPTORS: *Smokes, *Nicotine, *Cigarettes, Toxicity.

Sorgel, H. J.
NICOTINE DAMAGE IN THE CENTRAL NERVOUS SYSTEM. [1962] 12p.
Order from K-H $15.00 K-H 11335

Trans. of Deutsche Gesundheitswesen (East Germany) 1961, v. 16, no. 15, p. 686-690.

DESCRIPTORS: *Tobacco, *Nicotine, *Nervous system, Injuries.

Waltz, P. and Hausermann, M.
METHOD OF APPROXIMATION FOR THE DETERMINATION OF THE VOLUME OF SMOKE PUFFS ON THE BASIS OF DATA FROM SMOKER OBSERVATIONS, III. [1962].
Order from K-H $22.50 K-H 10969-f

Trans. of Mitteilungen aus dem Gebiete der Lebensmitteluntersuchungen und Hygiene (Switzerland) 1960, v. 51, no. 5, p. 325-338.

DESCRIPTORS: Determination, *Tobacco, *Smokes, Volume.

Werko, Lars.
CARDIOVASCULAR DISEASE AND TOBACCO SMOKING. [1962] 15p.
Order from K-H $15.75 K-H 11499-g

Trans. of Svenska Läkartidningen, 1961, v. 58, no. 31, p. 2153-2163.

DESCRIPTORS: *Circulatory system, Diseases, *Tobacco, Heart.

Wolffenbüttel, Ervin.
TOBACCO, CANCER AND PROPAGANDA. [1962] 7p.
Order from K-H $8.75 K-H 11006-b

Trans. of Revista Brasileira de Medicina, 1960, v. 17, no. 10, p. 899-901.

DESCRIPTORS: *Tobacco, *Cancer, *Propaganda.

Pharmacology and Toxicology

PHARMACY AND PHARMACEUTICAL AFFAIRS IN POLAND. 19 Feb 62 [57]p. JPRS: 12589.
Order from OTS or SLA $5.60 62-23341

Trans. and partial trans. (some parts summarized) of Farmacja Polska, 1961, v. 17, no. 12, p. 250-257; no. 13, p. 262-264, 266-271, 277-278; no. 14, p. 298-300, no. 15/16, p. 332-335, 341; no. 18, p. 390-391.

DESCRIPTORS: *Pharmacology, *Drugs, Research program administration, Scientific organizations, Medical personnel, *Scientific personnel, *Training, Therapy, *Age.

Contents:
Reports from Wojewodztwo and municipal pharmacy administrations
Activities of regional branches of the Polish Pharmaceutical Society
Activities of the regional pharmaceutical sections of the professional union of health service workers
Organization of pharmaceutical education and educational activities
Biographies, new appointments, conferring of degrees and awards
Conference on the evaluation of therapeutic geriatric drugs.

Arutyunyan, G. S. and Mashkovskii, M. D.
PHARMACOLOGICAL STUDY OF N-OXIDES OF NICOTINE. [1962] 11p.
Order from K-H $13.75 K-H 11679-b

Trans. of #Farmakol[ogiya i] Toksikol[ogiya] (USSR) 1961, v. 24 [no. 5] p. 534-540.
Another trans. is available from OTS or SLA $8.60 in 62-24016, JPRS-13504, 18 Apr 62 [94]p.

DESCRIPTORS: *Pharmacology, *Nicotine, Oxides.

Duchaine, J., Spapen, R., and Jacques, M.
THE NEW CORTICOSTEROIDS (METHYLPREDNISOLONE, TRIAMCINOLONE, DEXAMETHASONE) IN THE TREATMENT OF BRONCHIAL ASTHMA; COMPARISON WITH PREDNISONE; STUDY OF 145 CASES. 9 Dec 59, 4p. [figs. tables refs. omitted].
Order from SLA $1.10 62-14952

Partial trans. of la presse Médicale (France) 1959, v. 67, no. 34, p. 1386-[1388].

DESCRIPTORS: *Corticosteroids, Drugs, *Therapy, *Asthma.

The early secondary reactions have been studied. These occurred as often in the patients treated with methylprednisolone as in those under prednisone treatment. In contrast, dexamethasone was more irritating to the gastric mucosa. The cases of water retention were more numerous with the fluorine derivatives than with methylprednisolone. (Author)

Frets, G. P.
THE EFFECT OF OTHER GERM POISONS. [1962] 2p.
Order from K-H $2.50 K-H 3367-h

Trans. of Arch[iv für] Rassen- [und Gesellschafts-] Biol[ogie, Einschliesslich Rassen- und Gesellschafts Hygiene] (Germany) 1930, v. 24, p. 91-92.

DESCRIPTORS: *Microorganisms, Poisons, *Bacterial toxins.

Guseinov, D. Ya.
AN EXPERIMENTAL AND CLINICAL STUDY OF CRATAEGUS PENTAGYNA GROWING IN AZERBAIDZHAN (Eksperimental'noe i Klinicheskoe Izuchenie Boyaryshnika Pyatipestichnogo, Proizrastayushchego v Azerbaidzhan). 30 June 61 [15]p. 12 refs. JPRS: 9602.
Order from OTS or SLA $1.60 62-23474

Trans. of Sovetskaya Meditsina (USSR) 1961, v. 25, no. 2, p. 114-118.

DESCRIPTORS: *Drugs, *Vasomotor drugs, *Hypertension, Blood pressure, Cardiac muscle, Mammary glands.

The fruit, leaves and flowers of the hawthorn have always been widely employed in folk medicine in the treatment of various illnesses, especially diseases of the heart. Hawthorn fruit exerts a beneficial effect upon the heart similar to but weaker than that of digitalis. Preparations made from the leaves act primarily on the central nervous system as a tranquilizing agent. In addition, they stimulate cardiac activity and produce an increase in blood pressure. Hawthorn preparations enhance cardiac activity. Ether and urethane-anesthesia enhances the hypotensive effect of hawthorn preparations, while in deep anesthesia, against a background of lowered blood pressure, the alcohol extract effects a rise in blood pressure. The hypotensive effect of hawthorn preparations apparently results from their stimulating the parasympathetic nervous system and dilating the blood vessels. The liquid alcohol extract of the fruit of Crataegus pentagyna produces a fall in blood pressure, principally among patients with a neurogenic form of hypertensive disease, and enhances cardiac work. Consequently it can be employed in the treatment of hypertension, weakness of cardiac activity and functional disturbances of the heart. The liquid alcohol extract of Crataegus pentagyna significantly enhances lactation in nursing mothers and is recommended for use in the treatment of hypogalactia. (See also 61-15816)

Khaletskii, A.
BASIC DIRECTIONS OF THE WORKS OF THE ALL-UNION SCIENTIFIC-RESEARCH CHEMICOPHARMACEUTICAL INSTITUTE (A REVIEW OF THE ACTIVITY FROM 1920-57). 20 June 62 [10]p. JPRS: 14175.
Order from OTS or SLA $1.10 62-25178

Trans. of Meditsinskaya Promyshlennost' SSSR, 1962 [v. 16] no. 1, p. 60-63.

DESCRIPTORS: *Scientific organizations, *Drugs, Chemistry, Pharmacology.

Book review

Lohmeyer, H. and Gothe, D.
CLINICAL AND EXPERIMENTAL RESULTS WITH THE NEW LONG-ACTING SULFONAMIDE DURENAT. [1962] [8]p. 10 refs.
Order from SLA $1.10 62-14340

Trans. of Med[izinische] Klin[ik] (West Germany) 1961, v. 56, no. 47, p. 2000-2003.

DESCRIPTORS: Drugs, *Sulfonamides, *Bacteriostatic substances, *Chemotherapeutic agents, Effectiveness.

Durenat shows long-lasting, therapeutically active blood level and especially the high content of bacteriostatically active sulfonamide in serum and tissue, which is not bound to protein and not acetylated is to be mentioned. Correspondingly, the clinical testing gave a good bacteriostatic action with the principal infectious disorders of the genital apparatus and the urinary tract in our professional area. In addition to the good compatibility the simplicity of use, the low dosage and the convenience of taking only once daily are to be mentioned. (Author)

Maffii, G., Soncin, E., and Virga, R.
THE 14α-HYDROXYLATION IN 11-DESOXYCORTICOSTERONE (DOC) AND IN 17-HYDROXY-11-DESOXYCORTICOSTERONE (COMPOUND S). Pt. 1 of Some Aspects of the Relationships between Corticoid Activity and Steroid Molecular Structure. [1962] 8p.
Order from ATS $12.75 ATS-47P591

Trans. of Sperimentale; [Archivio di Biologia Normale Patologica] (Italy) 1957, v. 107, no. 1, p. 12-23.

DESCRIPTORS: Hydroxyl radical, *Adrenal cortical extract, *Steroids, *Molecular structure, *Drugs.

Maffii, G. and Cirga, R.
DEHYDROGENATION IN POSITIONS 1-2, 5-6, AND 8-14 IN 17-HYDROXY-11-DESOXYCORTICOSTERONE (COMPOUND S) AND IN OTHER STEROIDS. Pt. 2 of Some Aspects of the Relationships between Corticoid Activity and Steroid Molecular Structure. [1962] 6p.
Order from ATS $8.90 ATS-46P591

Trans. of Sperimentale; [Archivio di Biologia Normale Patologica] (Italy) 1957, v. 107, no. 1, p. 24-32.

DESCRIPTORS: *Dehydrogenation, *Adrenal cortical extract, *Steroids, *Molecular structure, *Drugs.

Mishin, L. N.
VIBRATING FILTER FOR LIQUID FILTRATION (Vibratsionnyi Fil'tr dlya Fil'tratsii Zhidkostei). 3 Aug 61 [16]p. 2 refs. JPRS: 9828.
Order from OTS or SLA $1.60 61-27668

Trans. of Novosti Meditsinskoi Tekhniki (USSR) 1959, no. 4, p. 84-95.

DESCRIPTORS: *Liquids, Separation, *Vibrators, Medical equipment, *Pharmacology.

Experiments showed that liquid filtration based on the use of the vibrating filter possesses several very valuable advantages over other methods of filtering liquids. The vibrating filter can provide continuous and prolonged filtration with no appreciable reduction in output. Since no deposit collects on the filtering element there is no need to interrupt the operation of the filter for cleaning or replacement of the filtering element. Deposition of the filtered particles in a special sump allows the removal of the deposit from the filter. This is particularly important in cases where the substances deposited are valuable and loss

of the deposit is undesirable. The need to remove the deposit is not determined by the layer of particles deposited on the surface of the filtering element, but by the capacity of the filter sump.

Morii, N.
EFFECTS OF VITAMIN K ON PROTHROMBIN, FACTOR V AND FACTOR VII COMPLEX IN FULL-TERM AND PREMATURE INFANTS. Pt. 2 of Studies of Prothrombin Complex in Full-term and Premature Infants. [1962] 10p.
Order from ATS $18.70 ATS-15N57J

Trans. of Nihon Shonika Gakkai Zasshi (Japan) 1961, v. 65, no. 2, p. 268-275.

DESCRIPTORS: *Vitamin K, *Prothrombin, Pharmacology, *Infants.

Panov, P., Ognyanov, I. and others.
ALKALOIDS OF VINCA HERBACEA W. K. I. 16 Nov 61 [7]p. JPRS: 11124.
Order from OTS or SLA $1.10 62-19492

Trans. of Bulgarska Akademiya na Naukite. Doklady, 1961, v. 14, no. 1, p. 39-41.

DESCRIPTORS: *Drugs, *Alkaloids, Pharmacology, *Plants.

Suzuki, Tomoji and Iwanaga, Sadaaki.
SOME OBSERVATIONS ON THE ALKALINE PHOSPHATASE OF JAPANESE AND FORMOSAN SNAKE VENOMS, tr. by W. Himel. Rept. no. 2 of Studies on Snake Venoms. 15 June 60, 21p. (12 figs. 2 tables omitted) 11 refs. NIH no. 6-10-60.
Order from OTS or SLA $2.60 60-19489

Trans. of Yakugaku Zasshi (Japan) 1958, v. 78, no. 4, p. 354-361.

DESCRIPTORS: *Snake venom, *Phosphatases, Enzymes, Chemical analysis, Separation, Purification, Japan, Taiwan.

Conditions for the measurement of alkaline phosphatase activity in snake venom were investigated. Diesterase activity was inhibited by glycine and monoesterase activity was increased. The activity of 5' -nucleotidase, monoesterases (TN: sic.), and monoesterases such as glycerophosphatase was inhibited by Zn^{2+}. Diesterase, monoesterase, 5' -nucleotidase and glycerophosphatase were found to be present in all of the ten types of Formosan and Japanese snake venom. The esterase activity of the Elapidae snake venom was generally stronger than that of the Crotalidae. Japanese snake venom was used in the isolation of esterase. The Crotalidae venom showed a strong diesterase activity and was suitable for the isolation of this enzyme. Since the monoesterase and glycerophosphatase activity was weak in Trimeresurus flavoviridis Hallowell, it was suitable for the isolation of 5' -nucleotidase. Both monoesterase and glycerophosphatase are non-specific monoesterases. However, there were differences in the optimum pH and optimum temperature, and there were differences in the stability toward heat and pH. Therefore, they are enzymes with their respective characteristics. (See also 59-21026)

Utsumi, Isamu, Ida, Tadao, and Takakhashi, Shoji.
STUDIES ON PROTECTIVE COATING. XII. ENTERIC COATING. 1. ACRYLIC AND METHACRYLIC ACID DERIVATIVES. [1961] [11]p. (foreign text included) 4 refs.
Order from SLA $1.60 62-10582

Trans. in manuscript of Yakugaku Zasshi (Japan) 1961, v. 81 [no. 6] p. 878-882.

DESCRIPTORS: *Intestine, Coatings, *Drugs, *Organic acids, Polymers.

In order to obtain synthetic high polymer enteric coating agent, various copolymers of methyl acrylate, acrylic acid, methyl methacrylate, and methacrylic acid were synthesized. These polymers were examined for their solubility in simulated gastric and enteric juice, permeability of water vapor through the film, and their viscosity and disintegrability were measured. Their availability as enteric coating agent was also examined and comparative examinations were made with shellac and cellulose acetate phthalate. It was thereby found that excellent enteric coating agent is found in methyl acrylate-acrylic acid system containing 9 to 42 molar % of free acid, methyl methacrylate-methacrylic acid system with around 70 molar % of free acid, and methyl acrylate-methacrylic acid system with 19 to 52 molar % of free acid. These polymers were also found to have better water vapor permeability and disintegrability than shellac or cellulose acetate phthalate. (Author)

Radiobiology

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 2: SELECTED ARTICLES. 21 May 62 [76]p. (31 photos. omitted) 72 refs. JPRS: 13820.
Order from OTS or SLA $7.60 62-25008

Trans. of #Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 2, p. 3-36, 42-48, 58-64, 68-71, 87-93.

DESCRIPTORS: *Radiobiology, *Radiation injuries, Radiological dosage, Radiation sickness, *Beta particles, Ionization, *Radioactive isotopes, Phosphorus, *Neoplasms, *Cancer, *Tumors, Sarcoma, *Chemotherapeutic agents, *Hemopoiesis, *Regeneration, Blood forming organs, *Bone marrow, Transplantation, *Public health, Industrial medicine.

Contents:
Injuries to healthy tissues from radiation therapy of malignant neoplasms of the chest, by G. A. Zedgenidze
Cancer as a result of radiation therapy, by G. G. Grikurov
Regeneration in radiation injuries, by G. S. Strelin
Chemical agents in the therapy of hematopoietic disorders occurring from the effect of ionizing radiation, by A. M. Rusanov and others

Complications of radiation therapy of benign and malignant tumors and non-neoplastic diseases, by A. V. Kozlova

The significance of bone marrow transfusions in the treatment of radiation depression of hematopoiesis, by A. A. Bagdasarov and others

Characteristics of the course of radiation sickness in internal irradiation with beta-rays of radioactive phosphorus, by T. G. Baramidze

The problem of the development of Soviet radiation hygiene, by M. N. Pobedinskii.

Alberti, K. and Alberti, W.
PROTECTION OF PERSONS ASSISTING IN RADIUM APPLICATION. 4 Jan 62 [9]p. JPRS: 11776.
Order from OTS or SLA $1.10 62-19668

Trans. of Neoplasma (Czechoslovakia) 1961, v. 8, no. 3, p. 323-329.

DESCRIPTORS: *Medical personnel, Personnel, *Radiation injuries, Countermeasures, *Shielding, *Radium, Therapy.

We have experienced good results with a protective chair made from 5-centimeter thick seamless tubes reaching up to the chin as shown in Figure 1. We enlarged the usual 6-centimeter lead shield in the gonad region to 10 centimeters. When we reconstructed the conditions existing during the Ra application behind the lead shield we measured a reduction in the dose representing values fifteen times smaller in the chest and abdomen regions and thirty times smaller in the gonad region. In view of the one-third reduction in the waist region as reported by Zeits and Zolg, who used Muller's chair with a 10-centimeter lead shield, we may conclude that the reason is the stray radiation affecting the unprotected upper part of the body. (Author)

Bonta, Janos.
TASKS, ORGANIZATION, AND REGULATIONS OF RADIATION PROTECTION. 25 June 62 [12]p. JPRS: 14260.
Order from OTS or SLA $1.60 62-25497

Trans. of Nepegeszsegugy (Hungary) 1962, v. 43, no. 4, p. 97-101.

DESCRIPTORS: *Radiation hazards, Scientific organizations.

Breshenkova, E. B. and Orlov, V. V.
RÉSOLUTION DE L'ÉQUATION CINÉTIQUE POUR UN MILIEU A SOURCE PONCTUELLE UNIDIRECTIONNELLE (Reshenie Kineticheskogo Uravneiniya dlya Sredy S Tochechnym Mononapravlennym Istochikom) tr. by [B.] de Trezvinsky. 10 Jan 62 [8]p. 6 refs. CEA Trans. no. R1472.
Order from OTS or SLA $1.10 62-24569

Trans. in French of #Atomn[aya] Energ[iya] (USSR) 1961, v. 10, no. 2, p. 175-177.

DESCRIPTORS: Equations, *Neutrons, *Gamma radiation, Kinetic theory, *Integral equations.

Grafov, A. A.
THE EFFECT OF ADRENOCORTICOTROPIC HORMONE (ACTH) ON THE CLINICAL COURSE OF ACUTE RADIATION SICKNESS IN HYPOPHYSECTIONIZED RATS. 21 May 62 [14]p. 34 refs. JPRS: 13821.
Order from OTS or SLA $1.60 62-24712

Trans. of Problemy Endokrinologii i Gormonoterapii (USSR) 1962, v. 8, no. 2, p. 57-64.

DESCRIPTORS: Hormones, *ACTH, *Therapy, *Radiation sickness, *Surgery, *Pituitary gland, Leukopenia, Erythrocytes.

Surgical removal of the hypophysis reduced the general radioresistance of white rats, causing acute radiation sickness with a dose of 100 r. The mortality rate after irradiation of hypophysectomized rats ranged from 37 to 40% and there was no mortality in non-operated irradiated animals during the 45-day observation period. The administration of ACTH to hypophysectomized rats contributed to the elimination of leucocytosis and delayed the development of erythropenia, which to a certain degree always occurred after surgical removal of the hypophysis. ACTH injections in hypophysectomized rats after irradiation did not decrease but, conversely, increased radiation leukopenia without exerting any effect on the erythropoietic function of the bone marrow. The maximum reduction in the total white blood count of irradiated hypophysectomized rats which received ACTH was 18% less than in the hypophysectomized irradiated animals which had not received hormone therapy, where the original white blood count was similar. The blood pressure, temperature, weight and survival rate indices in hypophysectomized irradiated animals which received and did not receive ACTH were approximately the same. However, the absence of a pronounced beneficial effect from the use of ACTH in hypophysectomized irradiated rats cannot constitute the basis for excluding it from comprehensive therapy in radiation injury. ACTH alone cannot compensate for the entire many-sided activity of the removed hypophysis in irradiated animals. (Author)

Osipov, Yu. A.
PUBLIC HEALTH RESEARCH ON ELECTROMAGNETIC RADIOWAVE FIELDS IN THE RSFSR. 15 May 62 [13]p. JPRS: 13755.
Order from OTS or SLA $1.60 62-24727

Trans. of Byulleten' Uchenogo Meditsinskogo Soveta (USSR) 1962, v. 3, no. 1, p. 7-10.

DESCRIPTORS: *Public health, *Electromagnetic waves, *Dosage, Broad band, High frequency, *Radiation effects, X-rays, Electromagnetic fields.

Patskevich, V. M.
CONFERENCE ON THE TREATMENT OF SEEDS WITH RADIOACTIVE RAYS PRIOR TO PLANTING. 20 Feb 62 [7]p. JPRS: 12660.
Order from OTS or SLA $1.10 62-24787

Trans. of #Atomnaya Energiya (USSR) 1961, v. 10 [no. 5] p. 549-551.
Another trans. is available from OTS or SLA $2.60 in 62-13258, JPRS-10769, 25 Oct 61 [26]p.

DESCRIPTORS: *Seeds, *Radiation effects, Histology, Growth, Gamma rays, X-rays, Ionization.

Surgery

Balyuzek, F. V., Shanin, Yu. N. and others.
EXPERIENCE WITH THE USE OF EXTRA-CORPOREAL CIRCULATION IN EXPERIMENTAL OPEN-HEART SURGERY. 7 Mar 62 [17]p. JPRS: 12850.
Order from OTS or SLA $1.60 62-23394

Trans. of Vestnik Khirurgii (USSR) 1961, v. 87, no. 11, p. 24-30.

DESCRIPTORS: *Blood circulation, *Heart, Surgery, *Artificial heart, Medical equipment.

Klyebanovskaya, L. P.
TWO CASES OF HOMEOPLASTIC (EMBRYONAL) TRANSPLANTS OF BONE, tr. by A. Thexton. [1962] [6]p. NLL M. 3345.
Order from OTS or SLA $1.10 62-23936

Trans. of Ortopediya, Travmatologiya i Protezirovanie (USSR) 1960, v. 21, no. 5, p. 77-79.

DESCRIPTORS: *Bone, *Transplantation, *Embryos, Tissues (Biology), Preservation.

Serova, E. V.
ALLOPLASTY OF THORACIC WALL DEFECTS BY MEANS OF CAPRON FABRIC. 30 Apr 62 [8]p. 4 refs. JPRS: 13620.
Order from OTS or SLA $1.10 62-24402

Trans. of Vestnik Khirurgii (USSR) 1962, v. 88, no. 2, p. 6-11.

DESCRIPTORS: *Plastic surgery, Thorax, *Synthetic fibers, Prosthetics.

Terekhova, L. G. and Eman, A. A.
SURGICAL POLYGRAPH PGN-01, A NEW DEVICE FOR CONTROL OF PHYSIOLOGICAL PROCESSES DURING OPERATIONS. 7 Mar 62 [20]p. 8 refs. JPRS: 12849.
Order from OTS or SLA $1.60 62-23398

Trans. of Vestnik Khirurgii (USSR) 1961, v. 87, no. 11, p. 16-24.

DESCRIPTORS: *Surgery, *Physiology, *Medical equipment, *Electrocardiography, *Electroencephalography.

Zoology

Andriyashev, A. P.
ON THE NUMBERS OF VERTEBRAE AND ON A FEW OTHER OSTEOLOGICAL CHARACTERS OF THE ANTARCTIC FISHES (BY X-RAY) tr. by Laurence Penny and Liza Lanz. 13 June 62 [8]p. 5 refs.
Order from OTS or SLA $1.10 62-25062

Trans. of Voprosy Ikhtiologii (USSR) 1959, no. 12 [p. 3-7].

DESCRIPTORS: *Fishes, Anatomy, Spine *Skeleton, Antarctic regions.

Preliminary data are presented on the number of vertebrae of 37 species, based on analyses of about 300 X-rays.

Egorova, T. V., Krogyus, F. V. and others.
CAUSES OF FLUCTUATIONS IN THE ABUNDANCE OF ONCORHYNCHUS NERKA (WALBAUM) OF THE OZERNAYA RIVER (KAMCHATKA) (Prichiny Kolebanii Chislennosti Krasnoi p Ozernoi) tr. by Ole A. Mathisen. Jan 62 [17]p. 7 refs.
Order from OTS or SLA $1.60 62-23279

Trans. of Voprosy Ihktiologii (USSR) 1961, no. 3(20) p. 439-447.

DESCRIPTORS: *Salmon, Fish, *Fisheries, *Ecology, Population.

Continuation of the Japanese fishery with its present volume leads to practical extinction of the valuable commercial stocks of red salmon in the Far East. (Author)

Konstantinov, A. S.
ON THE FOOD OF SOME PREDACIOUS CHIRONOMIDAE LARVAE (O Pitanii Nekotorykh Khishchnykh Lichinok Chironomidae). Apr 62 [22]p. 12 refs. RTS 2069.
Order from OTS or SLA $2.60 62-24363

Trans. of Voprosy Ikhtiologii (USSR) 1961, no. 3(20) p. 570-582.

DESCRIPTORS: *Insects, *Diptera, *Midges, *Food, Aquatic animals, Growth.

The larvae studied from the point of view of feeding, Cryptochironomus gr. defectus, Cr. monstrosus, Cr. gr. fuscimanus, Cr. gr. camptolabis, Cr. rolli, Cr. Gr. pararostratus, Psectrocladius gr. psilopterun, P. gr. dilatatus, Cricotopus gr. algarum, and C. bicinctus, are predacious, and the first 5 forms can be classified as obligate and the last 5 as facultative predators. Predacious Chironomidae use representatives of their own family, Oligochaeta, and plankton crustaceans as food. Benthic feed is preferred to plankton, and Chironomidae are eaten more than Oligochaeta. The foraging instinct in predacious Chironomidae is directly related to the concentration of prey. The presence of an ooze layer noticeably reduces the consumption of prey. Cannibalism does not usually occur among predators. Feeding on corpses is considered an exception. The majority of predators are more active during the day than at night. The quantity of food consumed by predators every 24 hrs frequently exceeds their own weight. Since their food range is the same as that of many valuable fishes, predacious Chironomidae compete with them for food. The occurrence of a large number of predators among the Chironomidae leads to the conclusion that the formulation of the problem of the differentiated assessment of the different biological larval groups as components of the food base of fish is now imminent. (Author)

Lebedev, N. V.
ELEMENTARY POPULATION OF FISHES, tr. by L. Birkett. 1961 [13]p. (2 tables omitted) 12 refs. NLL M. 3523.
Order from OTS or SLA $1.60 62-23878

Abstract trans. of Zoologicheskii Zhurnal (USSR) 1946, v. 25, no. 2, p. 136-164.

DESCRIPTORS: Ecology, Population, *Fishes, Herring.

The elementary population is a spatially isolated, numerous group of fishes, closely related by a close coincidence in time of the life cycle in all the individuals of the group due to their natural physiological uniformity. The population is called elementary because it cannot be divided into biological groups, and is homogeneous in composition. Basically the elementary population is an obviously lifelong grouping, stable in composition, though often experiencing changes at the cost of the variants lying at the extreme ends of the physiological range. Due to this dynamic character of its composition the elementary population, though it is formed at the site of birth, is not a grouping of fish all of the same age. The elementary population is very elastic in structure; at certain times it forms unstable shoals, variable in density and size, and numerous or single, but it may exist in a state of dispersion, not forming any shoals and occupying the maximal area possible for it. Elementary populations may become mixed in space, while remaining isolated in time. An elementary population is not hereditary, since it is not represented by fishes of every age. An elementary population can be delimited and mapped by various means and may be observed for a long period. (Author)

Medvedev, G. S.
TYPES OF ORAL APPARATUSES OF TENEBRIONIDAE OF TURKMENIA, tr. by R. Ericson. Feb 60 (16 figs. omitted).
Order from OTS or SLA $1.60 62-15642

Trans. of Zool[ogicheskii] Zhur[nal] (USSR) 1959, v. 38, no. 8, p. 1214-1229.

DESCRIPTORS: *Mouth, *Jaws, Insects, *Beetles, *Morphology, Ecology.

As a result of the study of the mouth parts of Tenebrionidae from Turkmenia, 3 groups of types of their structure were established, each according to the degree of closing of the preoral cavity. The more primitive tenebrionid construction of the mouth parts is wide spread in Tenebrionids with the concealed way of life and the night-time activity. The specialized pimelioid and tentyrioid structure is peculiar tc tribes in which day-time life has developed. Certain types are classified mainly on the basis of the structure of the mandible which is conditioned by the peculiarities of feeding. (Author)

Mironova, N. V.
BIOLOGY AND FISHING INDUSTRY OF POLLACK. [1962] [22]p. (9 figs. omitted) 30 refs. NLL M. 3406.
Order from OTS or SLA $2.60 62-23863

Trans. of [Akademiya Nauk SSSR]. Murmanskaya Biologicheskaya Stantsiya [Dal'nie Zelentsy]. Trudy, 1957, v. 3, p. 114-129.

DESCRIPTORS: *Marine biology, Aquatic animals, *Fishes, Growth, Distribution, Feeding, *Fisheries, Nets.

Odening, K.
ALARIA ALATA ("DUNKER'S MUSCLE-FLUKE"): EXPERIMENTAL TRANSMISSION TO APES. 28 Nov 61 [14]p. 3 refs. JPRS: 11260.
Order from OTS or SLA $1.60 62-19735

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 10, p. 395-399.

DESCRIPTORS: *Primates, *Trematodes *Parasitic infections, Parasitology, *Veterinary medicine.

"Dunker's muscle-fluke", that is, the Mesocercaria of Alaria alata (Goeze, 1782) - Trematoda, Strigeata: Diplostomatidae - can be transmitted to apes [i. e. Macaca mulatta Shaw]. In the experiment, 38 days following ingestion of Mesocercariae, there resulted a larval infection, predominantly found in the anterior portion of the body and in the neck. It is thus demonstrated that primates may also be reservoir-hosts of Alaria alata. It also is very probable that man belongs or can belong to this category. The foregoing results are recommended for consideration in veterinarian meat-inspection. (Author)

Preseren, T. and Tominc, A.
THE CONTROL OF THE CHERRY-FRUIT FLY ON THE COAST OF SLOVENIA [AND] INVESTIGATIONS ON THE CHERRY-FRUIT FLY IN DALMATIA (Suzbijanje Muhe Tresnjarice u Slovenskom Primorju [and] Ispitivanja Muhe Tresnjarice u Dalmaciji) tr. by Dusan Glumac. 1962, 30p. 15 refs. PL-480 Agr.
Order from OTS $0.50 60-21679

Trans. of Zastita Bilja (Yugoslavia) 1954, no. 23, p. 44-62 and no. 24, p. 79-86.

DESCRIPTORS: Insects, *Insect control, *Insecticides, *DDT, *Diptera, Reproduction, *Plants, Trees, *Fruits.

Savilov, A. I.
THE DISTRIBUTION OF THE ECOLOGICAL FORMS OF THE BY-THE-WIND SAILOR, VELELLA LATA CH. AND EYS., AND THE PORTUGUESE MAN-OF-WAR, PHYSALIA UTRICULUS (LA MARTINIERE) ESCH., IN THE NORTH PACIFIC. [1962] 16p.
Order from ATS $24.90 ATS-50P60R

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Okeanol[ogii]. Trudy, 1961, v. 45, p. 223-239.

DESCRIPTORS: *Marine biology, *Aquatic animals, *Morphology, Ecology, Pacific Ocean.

Semko, R. S.
THE STOCKS OF WEST KAMACHATA SALMON AND THEIR COMMERCIAL UTILIZATION (Zapasy Zapadnokamchatskikh Lososei i ikh Promyslovoe Ispolzovanie) tr. by R. E. Foerster. 1960, 131p. 106 refs.
FRBC Trans. series no. 288; FWS Trans. series no. 30.
Order from NRCC NRCC C-3832

Trans. of Tikhookeanskii Nauchno-Issledovatel'skii Institut Rybnog Khozyaistva i Okeanografii. Izvestiya (USSR) 1954, v. 41, p. 3-109.

DESCRIPTORS: *Fisheries, *Fish, Reproduction, Morphology, Distribution, *Ecology, Population, Embryos, Feeding, Culture, *Salmon

Szatybelko, Marian.
STUDIES OF FACTORS INFLUENCING CATCHING POTENTIAL OF SALMON AND TROUT FISHING GEAR (Studia nad Czynnikami Lownosci Uchwytujacych Narzedzi Polowu Lososia i Troci) tr. by N. Burakiewicz. 1961 [30]p. 19 refs. PL-480 Int.
Order from OTS $0.50 60-21364

Trans. of Morski Instytut Rybacki. Prace (Poland) 1957, [v.17] no. 9, p. 565-596.

DESCRIPTORS: Fishes, *Salmon, *Trout, Fisheries, *Nets, Dynamics, Vision.

It was found that contact between fish nets and the salmon fish occurs when the net is hidden from the senses of vision and the lateral lines of the fish. Hiding the net from the eyesight can be achieved by using nets made from the finest twine, or from glassy twines (twines from synthetic fibers), and by camouflaging the nets. A fish entangled by the net mesh encircling its body in the section between the head and the pectoral fin is fully capable of propulsive movement, and hence of releasing relatively considerable force, which calls for the strong resistance by the net. Resistance depends largely on the coarseness of the twine, which reduces the catching efficiency of the net. Catching the fish by the head limits to some degree those movements of the body which enable the fish to change position in its environment. This observation makes it possible to reduce the thickness of the twine from which the nets for deep sea salmon fishing are made. It is however absolutely essential that nets made from twine of reduced thickness be of such mesh that catches the fish by the head.

Tobias, V. I.
HABROBRACON BREVICORNIS WESMAEL 1838, A SYNONYM OF H. HEBETOR SAY 1836, tr. by R. Ericson. 7 Oct 59, 3p.
Order from OTS or SLA $1.10 62-15622

Trans. of Akad[emiya] Nauk Armyanskoi SSR [Erevan]. Izvestiya. [Biologicheskie i Sel'skokhozyaistvennye Nauki] 1958, v. 11, no. 11, p. 13-17.

DESCRIPTORS: *Moths, *Parasites, Classification, Morphology, Reproduction, Insects.

Vaclav, V.
THE IMPORTANCE OF APPLE AND PLUM ERMINE MOTH PARASITES IN REDUCING THE POPULATION OF THESE IMPORTANT INSECT PESTS IN BOSNIA AND HERZEGOVINA (Znacaj Parazita Jabukinog i Sljivinog Moljca u Smanjenju Populacije Ovih Vaznih Stetocina u Bosni i Hercegovini) tr. by Dusan Glumac. 1962, 9p. 4 refs. PL-480 Agr.
Order from OTS $0.50 60-21688

Trans. of Zastita Bilja (Yugoslavia) 1958, no. 49/50, p. 113-119.

DESCRIPTORS: Insects, *Moths, *Hymenoptera, *Diptera, *Parasites, Control, Population, *Plants.

The effect of parasites upon the reduction of the apple and plum ermine moth populations is considerable. The percentage of destroyed caterpillars and pupae ranged from 16.90 to 60.28 percent in 1956, and from 19.88 to 73.93 percent, with an average of 30 to 40 percent in 1957. The percentage of parasites is considerably smaller in towns and larger inhabited places where there is not sufficient food for them and where the insect pest appears in outbreak numbers. On the contrary, the percentage of parasitized caterpillars is very high outside the inhabited places and especially in places abundant with flowering meadows, pastures and brushwood. Damages due to moths in such places are insignificant or none at all. Among the parasites the most numerous are Angitia armilata, Herpestomus bruneicornis, Pimpla examinator, Agenia spis fuscicollis and two Tachinids species (not determined as yet). (Author)

Zaslavskii, V. A.
ON SUPERGENERIC GROUPS IN THE TRIBE HYPERINI (COLEOPTERA, CURCULIONIDAE) tr. by R. Ericson. 19 Nov 59, 3p. (Eng. summary omitted).
Order from OTS or SLA $1.10 62-15640

Trans. of #Ent[omologicheskoe] Obozr[enie] (USSR) 1959, v. 38, no. 3, p. 652-654.

DESCRIPTORS: *Insects, *Beetles, Classification.

CHEMISTRY

CHEMISTRY IN THE SOVIET UNION: RECENT ARTICLES. 14 June 62 [24]p. JPRS: 14126.
Order from OTS or SLA $2.60 62-25167

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1961, v. 27, no. 6, p. 835-836; #Uspekhi Khimii (USSR) 1961, v. 30, no. 12, p. 1429-1432; and from Pravda Ukrainy (USSR) 1961, no. 285(6005) p. 2; Turkmenskaya Iskra (USSR) 1961, 24 Sep, p. 2; Bakinskii Rabochii (USSR) 1961, 1 Oct, p. 2; no. 281(12366) p. 3.

DESCRIPTORS: *Chemistry, Scientific research, Communism, Conferences, Adsorption, Chromatographic analysis.

Contents:
Chemistry and the building of communism
In the depths of the chemistry of life, by A. Gasanov and B. Kaplan
Towards greater chemistry
A faster solution to a vast problem, by G. Sedel'nikov
Chemistry presses on
Ukrainian Republic Inter-University Conference on Adsorption and Methods of Chromatographic Analysis, by A. Morozov.

PROCESS FOR THE PARTIAL OR COMPLETE SEPARATION OF VARIOUS SOLID SUBSTANCES BY VAPORIZATION. [1962] 8p.
Order from ATS $12.75 ATS-08P61F

Trans. of French patent 1,148,715, filed 3 Apr 56, granted 24 June 57, pub. 13 Dec 57.

DESCRIPTORS: *Solids, *Separation, *Vaporization.

SOVIET SCIENTIFIC EDUCATION: RECENT ARTICLES. 19 June 62 [25]p. JPRS: 14242.
Order from OTS or SLA $2.60 62-25492

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1961, v. 6, no. 17, p. 55; #Zhurnal Prikladnoi Khimii (USSR) 1961, v. 34, no. 7, p. 1645-1648; Nauka i Zhytta (USSR) 1961 [v. 11] no. 11, p. 49; and from Sovetskaya Moldaviya (USSR) 1961, 4 Dec, p. 4; Meditsinskii Rabotnik (USSR) 1962, no. 17(2077) p. 3; Kommunist, Erevan (USSR) 1961, no. 277(8367) p. 2.

DESCRIPTORS: Science, *Education, *Chemistry, Instructors, Laboratories, Agriculture, Training, Universities.

Contents:
Chemistry teaching, by S. Kuz'menko
The Central Laboratory of the Higher Educational Institution, by A. Chechulin
Problems of the development of science and higher education, by V. A. Ambartsumyan and N. Kh. Arutyunyan
Courses for chief agronomists, by I. S. Makarova
Chemistry faculties of the Khar'kov Polytechnic Institute imeni V. I. Lenin (on the institute's 75th anniversary)
L'vov University is 300 years old, by E. K. Lazarenko.

Levina, S. D., Lobanova, K. P., and Vannikov, A. V.
EFFECTS OF THERMAL ACTION ON SYSTEMS COMPOSED OF POLYMERS AND DISPERSE METALS. [1962] 4p.
Order from ATS $6.50 ATS-10P60R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141, no. 3, p. 662-664.

DESCRIPTORS: *Polymers, *Powder metals, Temperature.

Analytical Chemistry

Bonnet, J. and Neukomm, S.
CHEMICAL COMPOSITION OF TOBACCO SMOKE. II. THE ALKALINE FRACTION. [1962] 11p.
Order from K-H $13.75 K-H 6124-a

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1957, v. 40 [no. 1] p. 113-118.

DESCRIPTORS: Chemical analysis, *Tobacco, *Smokes, Fractionization, Alkyl radicals.

Bonnet, J. and Neukomm, S.
CHEMICAL COMPOSITION OF TOBACCO SMOKE. III. THE ACID FRACTION AND URETHAN. [1962] 8p.
Order from K-H $10.00 K-H 6456-a

Trans. of Helvetica Chimica Acta (Switzerland) 1957, v. 40, no. 3, p. 717-721.

DESCRIPTORS: *Tobacco, *Smokes, Chemical analysis, Acids, *Urethanes.

Izdebaka, Kazimiera and Romanowski, Henryk.
NICOTINE DETECTION IN TOXICOLOGICAL ANALYSIS BY MEANS OF 1-CHLORO-2, 4-DINITROBENZENE AND PAPER CHROMATOGRAPHY. [1962] 7p.
Order from K-H $8.75 K-H 11627-a

Trans. of Acta Poloniae Pharm[aceutica] 1961, v. 18, no. 4, p. 339-342.

DESCRIPTORS: *Nicotine, *Nitrobenzenes, Toxicity, *Chromatographic analysis, Detection.

Khalifa, H. and Zaki, M. R.
FAST GREY, R. A., A NEW COLORIMETRIC REAGENT. I. SPECTROPHOTOMETRIC MICRODETERMINATION OF ZIRCONIUM (Fast Grey R. A., Ein Neues Colorimetrisches Reagens. I. Spektrophotometrische Mikrobestimmung von Zirkonium) tr. by D. A. Sinclair. 1962, 12p. 10 refs. NRCC Technical trans. 1003.
Order from NRCC $1.00 NRCC C3926

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1957, v. 158, p. 1-7.

DESCRIPTORS: *Zirconium, *Colorimetric analysis, *Reagents, Dyes, Sensitivity, *Spectrophotometers, Solutions, Colors, Determination.

Vigdergauz, M. S.
ANALYSIS OF COMPLEX ORGANIC MIXTURES BY MEANS OF GAS-CHROMATOGRAPHY. [1962] 31p.
Order from ATS $37.75 ATS-68P60R

Trans. of #Uspekhi Khim[ii] (USSR) 1962, v. 31, no. 1, p. 73-100.

DESCRIPTORS: *Organic compounds, Chemical analysis, *Gas chromatography, Complex compounds.

Waltz, P. and Hausermann, M.
INVESTIGATIONS CONCERNING A PROCEDURE FOR SMOKE ANALYSIS, II. [1962].
Order from K-H $28.75 K-H 10684-c

Trans. of Mitt[eilungen aus dem] Gebiete [der] Lebensm[ittel]Untersuchungen u[nd] Hyg[iene] (Switzerland) 1960, v. 51, p. 303-320.

DESCRIPTORS: *Smokes, Chemical analysis.

Wunsch, L.
COMPLEXOMETRIC TITRATIONS (CHELATOMETRY). XIII. THE DETERMINATION OF SCANDIUM, tr. by Maynard A. Hiller. [1960] 15p. 6 refs.
Order from OTS or SLA $1.60 AEC-tr-3833

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1955, v. 20, p. 1107-1112 (also published in Chemicke Listy (Czechoslovakia) 1955, v. 49, p. 843ff).

DESCRIPTORS: *Scandium, *Titration, *Chemical indicators, Cyanides, Glycerols, Thio radicals.

Conditions are discussed for the direct and indirect complexometric determination of scandium with eriochromblack T as indicator. The application possibilities of other indicators are discussed. By masking with cyanide and dimercaptol, it is possible to determine scandium in the presence of a number of other elements. (Author) (See also 59-10980)

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1958. VOL 3, NOS. 1-12, INDEX. 1962, 80p. PL-480 AEC.
Order from OTS $1.00 AEC-tr-4461

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, nos. 1-12, index.

DESCRIPTORS: *Chemistry, *Inorganic substances, Periodicals, *Indexes.

Bergman, A. G. and Goryacheva, V. P.
THE MUTUAL SYSTEM CONSISTING OF PYROPHOSPHATES AND SULFATES OF SODIUM AND CALCIUM [1962] 5p.
Order from ATS $6.75 ATS-20P61R

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1962, v. 7, no. 3, p. 628-632.

DESCRIPTORS: *Phosphates, *Sulfates, *Sodium compounds, Calcium compounds.

Budnikov, P. P., Royak, S. M. and others.
ON THE COMPOSITION AND STABILITY OF CALCIUM SILICATE HYDRATES UNDER CONDITIONS OF HYDROTHERMAL TREATMENT AT 700 ATM AND 200 C (O Sostave i Ustoichivosti Gidrosilikatov Kal'tsiya v Usloviyakh Gidrotermal'noi Obrabotki pri 700 Ati i 200°) tr. by G. N. Gibson. Jan 61 [5]p. 4 refs. DSIR Library Communication no 1024; NLL M 3260.
Order from OTS or SLA $1.10 62-24613

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1960, v. 134, no. 3, p. 591-594.

DESCRIPTORS: *Calcium compounds, *Silicates, *Hydrates, Synthesis, Water, Heat treatment, Stability, X-ray diffraction analysis, Microstructure.

Kamenetskaya, D. S.
THE PROBLEM OF CALCULATING MELTING DIAGRAMS OF BINARY SYSTEMS [K Voprosu o Raschete Diagramm Plavkosti Binarnykh Sistem]. [1962] 12p.
Order from ATS $19.90 ATS-14P60R

Trans. of Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1958, v. 3, no. 3, p. 607-610.
Other translations are available from OTS $3.75 in AEC-tr-4451 [1961] 426p. and from LC or SLA mi$11.10, ph$37.80 in 60-13423, F-TS-9531 [1959] [246]p.

DESCRIPTORS: Melting, *Gold, *Platinun.

Mahr, C. and Otterbein, H.
DETERMINATION OF CHLORIDE AND BROMIDE IN HALIDE MIXTURES (Bestimmung von Chlorid und Bromid in Halogenid-Gemischen). [1962] [10]p. 3 refs.
Order from SLA $1.10 62-10904

Trans. of Angewandte Chemie (West Germany) 1954, v. 66, no. 20, p. 636-638.

DESCRIPTORS: *Halides, Mixtures, *Chlorides, *Bromides, Determination.

The following paper describes a simple and rapid method, based on oxidation with $Ce(SO_4)_2$. Chloride and bromide may be determined simultaneously by potentiometric titration in mixtures containing iodide, cyanide and thiocyanate. (Author)

Mel'nikov, A. Kh., Firsova, T. P., and Moldkina, A. N.
THE PREPARATION OF PURE SAMPLES OF SODIUM PEROXIDE AND POTASSIUM SUPEROXIDE [AND] THE REACTION OF SODIUM SUPEROXIDE WITH CARBON DIOXIDE IN THE PRESENCE OF WATER VAPOR. 3 Apr 62 [23]p. 7 refs. FTD-TT-62-87.
Order from OTS or SLA $2.60 62-24336

Unedited rough draft trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1961, v. 6, no. 10, p. 2225-2236.
A review trans. is available from OTS or SLA $1.10 in 62-15412, AID-61-164, 13 Dec 61, 2p.

DESCRIPTORS: *Sodium compounds, *Peroxides, *Potassium compounds, *Oxides, Synthesis, *Carbon dioxide, Chemical reactions, Water vapor.

A method is developed for preparing pure sodium peroxide and potassium superoxide samples by oxidation of metallic sodium and potassium with pure oxygen. With a properly selected regime (oxygen concentration and temperature) it is possible to produce very pure sodium peroxide and potassium superoxide samples. An apparatus is proposed which makes it possible to set up and control the desired regime of sodium and potassium oxidation with pure oxygen. The time expended on the oxidation of metallic potassium and sodium with pure oxygen is 4 to 5 times smaller in comparison with that required when air is used during initial oxidation. The reaction of sodium superoxide with carbon dioxide in the presence of water vapor in the 10 to 25° temperature range was investigated. At 25° the process takes

place with full liberation of oxygen and the formation of sodium carbonate through an intermediate phase, the formation of sodium hydroxide. At temperatures lower than 10° the process takes place with the liberation of "superoxidic" oxygen only, and with the preservation of "peroxidic" oxygen in the composition of sodium peroxydicarbonate, $Na_2C_2O_6$. Sodium peroxydicarbonate is formed through an intermediate phase, sodium peroxide crystalline hydrate, with complete elimination of water. The final reaction products of the carbonation of sodium superoxide and of sodium peroxide are identical.

Mel'nikov, A. Kh., Tsentsiper, A. B. and others.
THE REACTION OF SODIUM PEROXIDE OCTAHYDRATE WITH CARBON DIOXIDE [AND] THE REACTION OF CARBON MONOXIDE WITH SODIUM AND POTASSIUM SUPEROXIDES. 3 Apr 62 [22]p. 13 refs. FTD-TT-62-88.
Order from OTS or SLA $2.60 62-24335

Unedited rough draft trans of #Zhurnal Neorganicheskoi Khimii (USSR) 1961, v. 6, no. 11, p. 2470-2480. A review trans. is available from OTS or SLA $1.10 in 62-15412, AID-61-164, 13 Dec 61, 2p.

DESCRIPTORS: Alkali metal compounds, *Sodium compounds, *Peroxides *Potassium compounds, *Oxides, Synthesis, *Carbon dioxide, *Carbon compounds, *Monoxides, Hydrates, Chemical reactions.

A method is developed to synthesize 94 to 95% pure sodium peroxydicarbonate $Na_2C_2O_6$ from sodium peroxide octahydrate and carbon dioxide consisting of a combination of metered feeding of carbon dioxide into the reactor with the simultaneous removal of the liberated water by evacuation. The synthesis takes place successfully in the 0° to +30° C temperature range and is recommended for laboratory-scale production of this compound. Certain properties of sodium peroxydicarbonate not found in the literature are investigated: the specific gravity, 2.075 g/cm^3, the thermal decomposition, the behavior toward a 30% potassium iodide solution, and toward hydrolysis. It is shown that at 95° C NaO_2 does not react with dry carbon monoxide. Above 100° C the formation of carbonate proceeds under conditions of thermal dissociation of the superoxide. The degree of conversion of NaO_2 increases when dissociation takes place in an atmosphere of CO. It is supposed that NaO_2, being in a labile condition, directly reacts with carbon monoxide. Potassium superoxide forms carbonates in an atmosphere of dry CO at 95°.

Perel'man, F. M.
CONSTRUCTION OF TENTATIVE FUSION DIAGRAMS OF THE SYSTEM Fe-Ni-Cu-Mn-Cr. [1962] 11p.
Order from ATS $13.95 ATS-15P60R

Trans. of Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1956, v. 1, no. 11, p. 2577-2587.

DESCRIPTORS: *Transition elements, *Atomic transmutation, *Iron, *Nickel, *Manganese, *Copper, *Chromium.

Takahashi, Takekiko.
SUBLIMATION OF ANHYDROUS ALUMINUM CHLORIDE. June 62, 2500 words.
Order from HB $9.25 HB-5287

Trans. of Kogyo Kagaku Zasshi (Japan) 1954, v. 57, no. 5, p. 337-339.

DESCRIPTORS: *Sublimation, Heat of sublimination, *Anhydrides, *Aluminum compounds, *Chlorides, Gases, Vapor pressure, Dissociation.

Winkler, H.
THE NUCLEAR MAGNETIC RELAXATION TIME OF WATER SORBED BY ALUMINUM OXIDE. [1962] 15p.
Order from ATS $22.60 ATS-24P59G

Trans. of Z[eitschrift fllr] Naturforsch[ung] (West Germany) 1961, v. 16a, p. 780-790.

DESCRIPTORS: *Aluminum compounds, Oxides, *Magnetic properties, *Relaxation time.

Organic Chemistry

IMPROVEMENTS IN PROCESSES OF PREPARING DERIVATIVES OF CYCLIC SULFAMIDES, tr. by F. H. B. 27 Nov 61, 7p.
Order from OTS or SLA $1.10 62-13490

Trans. of French patent 872,801, gr. 14, by Deutsche Hydrierwerke A. G., Germany, appl. 1941, granted 23 Feb 42, pub 19 June 42, appl. filed in Germany 23 May 39, per statement of applicant.

DESCRIPTORS: *Sulfamide, *Heterocyclic compounds, Synthesis, Amides, Nitrogen.

Three examples illustrate important derivatives of cyclic sulfamides that can be prepared when cyclic sulfamides substituted by heterocyclic radicals are formed on amide nitrogen by reacting with functional derivatives, such as anhydrides, or esters, such as e. g. phenolic esters and more particularly halides, cyclic sulfonic acids of the general formula G. R. SO_3 H (in which G represents an amino group possibly substituted, or a substituent that can be converted to an amino group, and R an aromatic, heterocyclic or aromatic-heterocyclic ring, possibly substituted), isolated or condensed or aminosubstituted heterocyclic pentagonal ring compounds, whose heterocylic ring contains two nitrogen atoms in the ortho position and possibly one oxygen atom; the amino groups may be formed in the known manner in the prepared condensation products.

A METHOD FOR THE PREPARATION OF MONOCARBOXYLIC ACIDS. [1962] 5p.
Order from ATS $10.50 ATS-60P61FL

Trans. of Belgian patent 608,775 (priority: Dutch patent appl. 256,555 filed 5 Oct 60).

DESCRIPTORS: Acids, *Carboxylic acids, Synthesis.

A METHOD OF CIS-TRANS ISOMERIZATION OF THE RADICALS OF FREE UNSATURATED FATTY ACIDS OR THEIR ESTERS. [1962] 2p.
Order from ATS $3.75 ATS-34P61R

Trans. of USSR patent 123,648, filed 12 Jan 59.

DESCRIPTORS: *Fatty acids, *Fatty acid esters, *Molecular isomerism, Free radicals.

Bartenev, G. M. and Gul', V. E.
METHODS OF INVESTIGATING THE STRENGTH OF POLYMERS. [1962] 18p.
Order from ATS $24.85 ATS-69P60R

Trans. of Vsesoyuz[noe] Khim[icheskoe] Obshchestva Zhur[nal] (USSR) 1961, v. 6, no. 4, p. 394-403.

DESCRIPTORS: *Polymers, Test methods, Mechanical properties.

Bashkirov, A. N. and Vener, I. M.
PREPARATION OF PURE CARBOLIC ACID FROM COAL TAR PHENOLS. [1961] 3p. 2 refs.
Order from OTS or SLA $1.10 62-10869

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1944, no. 1/2, p. 48-50.

DESCRIPTORS: *Coal tar, *Phenols, Synthesis, Chemical reactions.

Bebikh, G. F., Kuskov, V. K., and Gur'yanova, I. V.
PHOSPHORYLATION OF POLYMERS WITH PHOSPHORUS PENTASULFIDE. [1962] 4p.
Order from ATS $7.50 ATS-58P61R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 12, p. 1853-1856.

DESCRIPTORS: *Phosphorylation, *Phosphorus compounds, Sulfides, *Polymers.

Bermejo Martinez, F., Barcelo, J., and Prieto Bouza, A.
THE NOMENCLATURE OF ETHYLENEDIAMINE-TETRAACETIC ACID AND ITS ANALOGS, AND THEIR APPLICATIONS TO ANALYSES. [1961] 6p.
Order from ATS $9.95 ATS-46M46SP

Trans. of Informacion de Microquimica [sic] 1959, v. 3, no. 8, p. 29-37.

DESCRIPTORS: Acids, *Ethylenedinitrilo tetracetates, Chemical analysis.

Carelli, V., Liquori, A. M. and others.
THE ABSORPTION OF POLAR MOLECULES BY LINEAR POLYAMIDES. II. CHROMATOGRAPHIC SEPARATION OF PHENOLIC ISOMERS. [1962] 16p.
Order from K-H $20.00 K-H 6178

Trans. of la Chimica e l'Industria (Italy) 1955, v. 37, [no. 12] p. 960-965.

DESCRIPTORS: *Molecular isomerism, Absorption, Polymers, *Amides, *Chromatographic analysis, *Phenols.

Fischer, M., Lautenschlager, H., and Staiger, G.
PROCESS FOR THE PREPARATION OF POLYOLEFINS WITH AVERAGE OR LOW MOLECULAR WEIGHTS. [1962] ep.
Order from ATS $5.00 ATS-19P61G

Trans. of German printed patent application 1,122,257, filed 8 Apr 60, opened for public inspection and pub. 18 Jan 62.

DESCRIPTORS: Polymers, *Ethylenes, Preparation, Molecular weight.

Freudenberg, Karl and Adam, K.
CARBONIZATION OF LIGNINS IN A STREAM OF HYDROGEN. [1962] 18p.
Order from K-H $22.50 K-H 6234-a

Trans. of [Chemische] Ber[ichte] (Germany) 1941, v. 74, no. 3, p. 387-397.

DESCRIPTORS: *Carbonization, *Lignins, Hydrogen.

Frolov, A. F.
CALCULATION OF THE TWO-SOLVENT EXTRACTION PROCESS. [1962] [11]p.
Order from OTS or SLA $1.60 62-10970

Trans. of Khimicheskoe Mashinostroenie (USSR) 1959 [v. 1] no. 6, p. 29-32.

DESCRIPTORS: *Solvent extraction, Organic solvents, Hydrocarbons, Separation, Numerical analysis.

A graphic method is described for calculating the number of theoretical steps of the two-solvent extraction process using two solvents and used chiefly for separating hydrocarbons. (Author)

Gurinov, B. P.
THE EFFECT OF THE METHOD OF COMBUSTION AND THE TYPE OF FUEL ON THE CONTENT OF 3,4-BENZPYRENE IN SMOKE GASES. Oct 60, 7p.
Order from K-H $8.75 K-H 10402-d

Trans. of [Gigiena i Sanitariya] (USSR) 1958 [v. 23, no. 12] p. 6-9.

DESCRIPTORS: *Hydrocarbons, *Benzyl radicals, *Combustion, Fuels, *Smokes, Gases.

Ivanov, K. I.
THE DIRECTION OF THE INITIAL ACTION OF MOLECULAR OXYGEN ON HYDROCARBONS OF VARIOUS STRUCTURES IN THE LIQUID PHASE. [1962] 12p.
Order from ATS $16.40 ATS-33N58R

Trans. of mono. Problemy Okisleniya Uglevodorov [Problems on the Oxidation of Carbons, Moscow] 1954, p. 111-123.

DESCRIPTORS: *Oxygen, Oxidation, Hydrocarbons, Liquids.

Ivanov, K. I., Savinova, V. K., and Zhakhovskaya, V. P.
PEROXIDES FORMED DURING AUTOXIDATION OF CERTAIN ALKANES AND CYCLOALKANES. [1962] 17p.
Order from ATS $28.60 ATS-34N58R

Trans. of mono. Problemy Okisleniya Uglevodorov [Problems on the Oxidation of Carbons, Moscow] 1954, p. 124-139.

DESCRIPTORS: Oxidation, *Peroxides, Hydrocarbons.

Kazaryan, P. E.
PRESENT STATUS AND FUTURE PROSPECTS OF CALCIUM CYANAMIDE PRODUCTION. [1962] 9p.
Order from ATS $12.95 ATS-50P61R

Trans. of Vsesoyuz[noe] Khim[icheskoe] Obshchestva. Zhur[nal] (USSR) 1962, v. 7, no. 1, p. 87-91.

DESCRIPTORS: *Calcium compounds, *Cyanamides, Manufacturing methods.

Kitayama, H., Osawa, Y., and Masuzawa, T.
FOAMING ABILITY OF POLYETHYLENE COMPOUNDED WITH AZODICARBONAMIDE AND DINITROSOPENTAMETHYLENETETRAMINE. Pt. 2 of Studies of Cellular Polyethylene. [1962] 14p.
Order from ATS $15.75 ATS-52P61J

Trans. of Nihon Gomu Kyokaishi (Japan) 1959, v. 32, no. 7, p. 527-535.

DESCRIPTORS: *Polymers, *Ethylenes, *Expanded plastics, Carbon compounds, Amides, Azo radicals, Cyclopentanes, Amines, Nitroso radicals, Foams, Pentanes, Methanes.

Kovacs, A. J.
THE ISOTHERMAL CONTRACTION OF THE VOLUME OF AMORPHOUS POLYMERS. 13 Feb 59 [29]p. 27 refs.
Order from SLA $2.60 62-14303

Trans. of J[ournal of] Polymer Sci[ence] (U. S.) 1958, v. 30 [no. 121] p. 131-147.
Another trans. is available from SLA mi$2.70, ph$4.80 as 61-10664 [1961] 26p.

DESCRIPTORS: *Polymers, *Styrenes, *Vinyl radicals, *Acetates, Volume, Temperature, Mechanical properties.

For abstract see Technical Translations 5: 663, 1961.

Malawski, Marek J. and Wrotek, Jerzy.
METHOD OF GRAPHIC ANALYSIS OF THE KINETICS OF A SYSTEM OF INTERDEPENDENT CHEMICAL REACTIONS, III (Metoda Graficzne Analizy Kinetyki Ukladu Zaleznych od Siebe Reakcji Chemicznych, III). 15,Sep 61 [11]p. 4 refs. JPRS: 10165.
Order from OTS or SLA $1.60 62-23268

Trans. of Roczniki Chemii (Poland) 1961, v. 35, no. 2/3, p. 671-678.

DESCRIPTORS: *Chemical reactions, *Organic compounds, Differential equations, Matrix algebra.

The previously described method of graphical examination of systems of differential equations describing the course of chemical reactions which are interrelated in some way is extended to the case where the change in concentration as a function of time may be measured for p different substances participating in the chemical transformations being studied. (Author)

Martin, H. and Vohwinkel, F.
AROMATIC TITANIUM-ALUMINUM CHLORIDE COMPLEXES. [1962] 14p.
Order from ATS $19.95 ATS-28P60G

Trans. of Chem[ische] Ber[ichte] (West Germany) 1961, v. 94, no. 9, p. 2416-2429.
Another trans. is available from SLA $2.60 as 62-14298 [1962] 27p.

DESCRIPTORS: *Titanium compounds, *Aluminum compounds, Chlorides, Complex compounds, Metalorganic compounds.

Miwa, T.
METHOD OF MANUFACTURE OF VINYL CHLORIDE. [1962] 2p.
Order from ATS $4.00 ATS-75P60J

Trans. of Japanese patent 162,228, appl. filed 30 July 43 as no. 10,199 (1943).

DESCRIPTORS: *Vinyl chlorides, Manufacturing methods.

Nano, F.
BLACK POLYETHYLENE: PREPARATION, ANALYSES AND EVALUATION OF THE DEGREE OF DISPERSION OF CARBON BLACK IN RELATION TO AGING. [1962] [21]p. 6 refs.
Order from SLA $2.60 62-14306

Trans. of Materie Plastiche (Italy) 1960, v. 26, no. 12, p. 1140-1147.

DESCRIPTORS: *Carbon black, *Polymers, *Ethylenes, Preparation, Analysis, Tests, *Aging, Electron microscopy, Absorption, Oxidation.

Natta, G[iulio] Pasquon, I[talo] and others.
LINEAR HIGH POLYMERS OF PROPYLENE POSSESSING SYNDIOTACTIC STRUCTURE. [1962] 5p.
Order from ATS $8.00 ATS-72P59

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe [di] Sci[enze] Fi[ziche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1960 [ser. 8] v. 28, no. 5, p. 539-544.
Another trans. is available from CTS (Chem) $6.80 subsequent copies $1.15/ea. as CTS (Chem)-258 [1962] 5p.

DESCRIPTORS: *Propenes, *Polymers, Chemical analysis.

Ouchi, H.
METHOD OF PREPARATION OF HALOPHENYL HYDROXYETHYL ETHERS. [1962] 4p.
Order from ATS $6.00 ATS-77P59J

Trans. of Japanese [published] patent 912(1960) pub. 18 Feb 60, appl. filed 12 Dec 56 as no. 31126(1956).

DESCRIPTORS: *Phenols, *Ethyl ethers, Hydroxides, Manufacturing methods.

Rodionova, E. F., Kolesnikov, G. S. and others.
POLYMERIZATION AND COPOLYMERIZATION OF DIPHENYL VINYLPHOSPHONATE. Pt. 37 of Carbon-Chain Polymers and Copolymers. [1962] 5p.
Order from ATS $6.00 ATS-46P61R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 3, p. 448-451.

DESCRIPTORS: *Polymerization, *Copolymerization, *Diphenyl, *Vinyl radicals, Phosphonium radicals.

Sforzolini, G. S. and Mariani, A.
3,4-BENZYPYRENE AND OTHER POLYCYCLIC HYDROCARBONS IN THE SMOKE OF "NAZIONALI ESPORTAZIONE" CIGARETTES. [1962] 5p.
Order from K-H $6.25 K-H 11517-c

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1961, v. 37, p. 766-769.

DESCRIPTORS: *Hydrocarbons, *Smokes, *Cigarettes, *Tobacco, *Benzyl radicals.

Strongin, G. M., Peterson, M. S. and others.
A METHOD FOR THE PREPARATION OF AZODICARBOXAMIDE. [1962] 2p.
Order from ATS $3.50 ATS-12P61R

Trans. of USSR patent 138,930 [1960].

DESCRIPTORS: *Azo radicals, *Amides, *Carboxyl radicals, Synthesis.

Yasuda, Takeshi.
ON THE SPINNING QUALITIES OF METHYL ACRYLATE COPOLYMER[S]. Pt. 4 of Studies on Synthetic Fibers [produced from Acrylonitrile]. [1962] 11p. 14 refs.
Order from SLA $1.60 62-16011

Trans. of Sen-i Gakkaishi (Japan) 1961, v. 17, no. 1, p. 27-30.
Another trans. is available from ATS $12.00 as ATS-94N51J [1961] 6p

DESCRIPTORS: *Acrylonitriles, *Acrylic acid esters, Polymerization, Plasticity, Fibers, *Synthetic fibers.

Fiber was produced by the process in which copolymer of methyl acrylate containing acrylonitrile 92 - 100 mol% was treated by spinning in butanol and by heat stretching in glycerin. Pure polyacrylonitrile did not produce the coagulation state in which adequate plasticity may be exhibited. Continuation of spinning was difficult, but copolymer containing a small quantity of methyl acrylate exhibited adequate plasticity, and stretching and winding were easy. For example, fiber with tensile strength 3.6 g/den and elongation 14.8% was produced from 2 mol% copolymer. (Author)

Ziegler, Karl.
THE MULHEIM NORMAL PRESSURE POLYETHENE PROCESS. [30 Sep 55] 15p.
Order from SLA $1.60 62-16731

Trans. of German language article from Max Planck Institute for Coal Research, Mülheim/Ruhr, Aug 55.

DESCRIPTORS: *Ethylenes, Polymerization, Pressure.

This paper tells the story of how the "normal pressure polyethene process" happened to be discovered at the Institute in Muelheim, for this discovery is a matter of historical interest and merits preservation. (Author)

Physical Chemistry

Deryagin, B. V.
AEROSOLS (SMOKE AND MISTS) (Aerozoli (Dymy i Tumany)). 11 Aug 61 [36]p. 12 refs. JPRS: 9883.
Order from OTS or SLA #3.60 61-27689

Trans. of Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii. Seriya 9 (USSR) 1961, no. 3, 32p.

DESCRIPTORS: *Aerosols, Smokes, Particles, Condensation, Decomposition, Drops, Electrical properties, Pest control, Insecticides, Sprays, Drugs, Antibiotics, Artificial precipitation, Precipitation, Air, Purification, Warfare, Coatings.

Contents:
What is an aerosol?
The study of aerosols
The formation of air-dispersed systems
Decomposition of aerosols
Aids for the lecturer

Dubinin, M. M. and Zhukovskaya, E. G.
STUDY OF THE POROUS STRUCTURE OF SOLIDS BY SORPTION METHODS. II. COMPARISON OF DIFFERENT METHODS OF CALCULATING PORE-VOLUME AND SURFACE DISTRIBUTION WITH RESPECT TO SIZE FOR SORBENTS IN TYPICAL EXPERIMENTAL MATERIAL. [1962] 12p. 12 refs.
Order from OTS or SLA $1.60 62-16188

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1956, v. 30, no. 8, p. 1840-1851.
Another trans. is available from ATS $17.40 as ATS-98N50R [1961] 12p.

DESCRIPTORS: Solids, *Porous materials, *Porosity, *Adsorption, Adsorbents, Test methods.

A comparative appraisal is made of different methods for calculating the pore-volume and surface distribution with respect to size on typical experimental material. Conclusions are drawn concerning the basic limits of applicability of the methods and the choice of the most effective of them for practical use. (Author)

Khitarov, A. I.
NEW DATA CONCERNING THE PHASE TRANSFORMATION OF BISMUTH, CESIUM, THALLIUM AND BARIUM AT ULTRA HIGH PRESSURE. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-16146

Trans. of #Geokhimiya (USSR) 1961 [no. 2] p. 187.
Another trans. is available from OTS $0.50 as 62-11302, MDF K-258 [1961] [1]p.

DESCRIPTORS: *Bismuth, *Cesium, *Thallium, *Barium, *High pressure research, Phase transitions.

Kiselev, A. V., Kovaleva, N. V., and Korolev, A. Ya.
OXIDATION OF CHANNEL BLACK IN AN AQUEOUS MEDIUM. Pt. 1 of Adsorptive Properties of Oxidized Carbon Blacks. [1962] 10p.
Order from ATS $13.95 ATS-60P60R

Trans. of #Kolloid[nyi] Zhur[nal] (USSR) 1961, v. 23, no. 5, p. 582-591.

DESCRIPTORS: *Carbon black, Oxidation, Adsorption.

Kiyama, Ryo.
ULTRA-PRESSURE. III. PRESSURE-PROOF CHARACTER OF OPTICAL WINDOW. IV. PRESSURE-PROOF PACKING. [1959] 24p. (foreign text included; also abstract for II) 7 refs.
Order from OTS or SLA $2.60 AEC-tr-3657

Trans. of [Butsuri Kagaku No Shimpo] (Japan) 1945, v. 19, p. 17-19 and 21-24.

DESCRIPTORS: *High pressure research, *Pressure vessels, *Transparent panels, Hydraulic seals, Pneumatic packings, Glass, Electrochemistry.

It is most desirable to be able to examine optically the inside of the pressure chamber. Low strength of glass or quartz makes in unable to do this. Glass, however, though weak in tensile strength, is strong against compression, and this can be taken advantage of by adopting the cylindrical type instead of the cone type and without using a pressure-proof packing. In this case, the steel surface and glass or quartz surface must be polished for optical use. The polished surfaces have hitherto been set with a small quantity of Canada balsam. The author succeeded in setting pieces of glass or quartz tight only by pressing them hard and without any cementing material. If well polished, they are never detached in spite of the absence of any adhesive material. It is maintained that such setting is more satisfactory as compared with the case when any cementing material, however small the quantity, is used. Packing for the optical window and electrode has been discussed in Reports I and II. Large pipe connection, closing of hole and piston packing must be here dealt with. Sealing is performed by the method of automatic compression by pressure greater than the inner pressure. The materials used for packing decide the size and type of the packing. The author examined rubber, hard lead, tin and copper, and obtained satisfactory results by merely changing the dimensions of those materials. In case the compressed gas may dissolve or etch the packing, a suitable material for packing should be adopted. (Author)

Kogarko, S. M., Mikheev, V. V., and Basevich, V. Ya.
EFFECT OF ACTIVE PARTICLES OF PRODUCTS OF COMBUSTION ON THE LIMITS OF IGNITION IN TURBULENT FLOW. 28 Mar 62 [13]p. 5 refs.
FTD-TT-62-143.
Order from OTS or SLA $1.60 62-24349

Unedited rough draft trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1961, v. 35, no. 10, p. 2341-2347.

DESCRIPTORS: *Turbulent flow, *Ignition, *Particles, *Combustion, *Fuels, Hydrogen, Hydrocarbons, Natural gas, Flame propagation.

The effect of enhanced initial concentrations of active particles (free oxygen and hydrogen atoms and OH) on the inflammation limits in a turbulent flow has been investigated. The active particles contained in the products of hydrogen and hydrocarbon combustion in beyond-equilibrium concentrations during the time of recombination and introduced into the fresh fuel, considerably broadens the improverished ignition limit for diverse rates and temperatures of the flow. No effect was noted on the rich limit within the range of concentrations of active particles and of velocities obtained in the study. As chief fuel components served n-butane, n-butane-isobutane mixture, hydrogen, and city gas. Inflammation was effected through sparking, pilot flame and heated body. Change in concentration of the active particles by introduction of variously coated surfaces in the flow affects the impoverished inflammation limit in conformity with the probabilities of recombination of the active particles on the surface. The increase in the inflammation limits due to the active particles is explained by an increase in reaction rate in the initial stages of the burning process. (Author)

Krause, Alfons and Lezuchowska, Janina.
ON THE CATALYTIC ACTION OF SiO_2 IN AIR OXIDATION OF $Fe(OH)_2$ (O Dzialaniu Przyspieszajacym Krzemionki w Reakcji Utleniania $Fe(OH)_2$ Tlenem Powietrza). 1959 [11]p. 9 refs. NRL Trans. 713.
Order from OTS or SLA $1.60 59-11919

Trans. of Roczniki Chemii (Poland) 1958, v. 32, p. 29-38.

DESCRIPTORS: *Catalysts, *Silicon compounds, Dioxides, *Iron compounds, *Hydroxides, Oxidation, *Minerals, *Corrosion

$Fe(OH)_2$ precipitated from an $FeSO_2$ solution with NaOH in varying molar proportions was shaken for 3 hours in the air at 18 degrees and oxidized. When the pH of the mother liquor is 5.2-5.4 (the isoelectric point of gamma-FeOOH), one obtains gamma-FeOOH or at least oxidation products containing gamma-FeOOH, while with higher pH, particularly between around 7 and around 11, dark ferrous ferrites are produced; thus, despite similar experimental conditions the oxidation of $Fe(OH)_2$ is incomplete. When the pH exceeds about 12 (the isoelectric point of $Fe(OH_3$, alpha-FeOOH is formed as the oxidation product. But when the reaction mixture contains sufficient SiO_2, or sufficient sodium silicate (0.0087 volume % SiO_2 with 3 grams of $FeSO_4 . 7H_2O$), then ferrous ferrite, which is poor in water, and difficultly soluble in HNO_3, is not formed. Instead X-ray amorphous ortho-ferric hydroxide, which is rich in water (and easily soluble in HNO_3) is formed primarily, in addition to alpha-FeOOH. The latter is also obtainable at those pH, at which (without SiO_2) gamma-FeOOH, or oxidation products containing gamma-FeOOH, are produced. However, in this case X-ray amorphous ferric hydroxide contains sulfate (ferric sulfate), since the original $FeSO_4$ solution which was placed with the NaOH ($FeSO_4$:NaOH = 1:0.5) is acid (pH= 5.1). (Author)

Levinson, M. S. and Kovrov, B. G.
MECHANISM OF OXIDATION BY ULTRASOUND. May 62 [6]p. 15 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1960, no. 12, p. 67-77.

DESCRIPTORS: *Ultrasonic radiation, *Water, *Iodides, *Potassium compounds, *Oxidation, Ultrasonics, Argon, Hydrogen, Chemical reactions.

Lozovoi, A. V., Muselevich, D. L. and others.
HYDROGENATION CATALYSTS WITH A SILICA-ALUMINA BASE, PT. 2. [1962] 8p.
Order from ATS $10.50 ATS-70P58R

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34, no. 10, p. 2295-2302.

DESCRIPTORS: *Hydrogenation, Catalysts, *Alumina-silica catalysts.

Maitak, G. P. and Tret'yakova, G. S.
ELECTROLYTES FOR THE ELECTROCHEMICAL POLISHING OF STEEL. [1962] 7p.
Order from ATS $10.50 ATS-26P61R

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1959, v. 32, no. 5, p. 1060-1065.

DESCRIPTORS: *Electrolytes, *Electrolytic polishing, *Steel, Manufacturing methods.

Matveev, M. A. and Dyatlova, V. P.
MANUFACTURE OF SAND-SILICATE WATER-RESISTANT FILTER PRODUCTS [Poluchenie Vodostoikikh Peschano-silikatnykh Fil'truyushchikh Izdelii]. [1961] 5p.
Order from ATS $7.50 ATS-03N51R

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1959, v. 32, no. 1, p. 50-54.

DESCRIPTORS: *Sand, *Silicates, *Water filters, Adhesives, Moisture, Production, Pipes, Sheets, Permeability, Tests, Mechanical properties.

Ornatskii, N. V. and others.
THEORY OF CLOGGING OF A SAND BED WHEN A CLAY SUSPENSION IS FILTERED THROUGH IT (Teoriya Kolmatatsii Peschanogo Grunta pri Filtratsii cherez Nego Glinistoi Suspenzii). July 61 [46]p. 52 refs. RTS 1822.
Order from OTS or SLA $4.60 61-23833

Trans. of mono. Issledovanie Protsessa Kol'matatsii Peskov, Moscow U, 1955, chap. 3, p. 49-80.

DESCRIPTORS: *Sand, *Clays, *Fluid flow, Liquids, Solids, *Porous filters, Porosity, Motion, Pressure, Phase studies, Mathematical analysis.

Systems of equations expressing continuity, movement and equilibrium are derived and solved for the cases of (1) constant flow rate and variable pressure drop and (2) variable flow rate and constant pressure drop.

Ozerov, R. P.
CRYSTAL CHEMISTRY OF THE OXYGEN COMPOUNDS OF VANADIUM, TUNGSTEN AND MOLYBDENUM [Kristallo-Khimiya Kistorodnykh Soldinenii Vanadiya Vod'frama i Molibdena]. 1961, 60p. 123 refs.
Order from OTS or SLA $5.60 AEC-tr-4839

Trans. of Uspekhi Khimii (USSR) 1955, v. 24, p. 951-984.

DESCRIPTORS: *Vanadium compounds, *Tungsten compounds, *Molybdenum compounds, *Oxides, Oxygen compounds, *Crystals, Chemistry, Physical chemistry, *Bronze, Sodium, Lithium, Catalysts, Catalysis, Magnetic properties, Electrical conductance, Crystal structure.

Ozerov, R. P.
TUNGSTEN AND VANADIUM BRONZES. [1962] 6p. 13 refs.
Order from OTS or SLA $1.10 62-16141

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 99 [no. 1] p. 93-95.

DESCRIPTORS: *Bronze, *Tungsten compounds, *Vanadium compounds, Valence, Chemical analysis.

Razumikhin, V. N.
A HYDROSTATIC METHOD FOR MEASURING LIQUID DENSITIES AT PRESSURES UP TO 5000 kg/cm^2 (Gidrostaticheskii Metod Opredeleniya Plotnosti Zhidkostei pri Davleniyakh do 5000 kg/cm^2). [Paper from Investigations of Physical Properties of Fluids]. Mar 62 [20]p. 5 refs. RTS 1993.
Order from OTS or SLA $1.60 62-24294

Trans. of [Komitet Standartov, Mer i Izmeritel'nykh Priborov]. Trudy Institutov Komiteta (USSR) 1960, v. 46(106) p. 96-106.

DESCRIPTORS: *Liquids, Density, Measurement, *High pressure research, *Balances, Fluids, Physical properties.

Rüetschi, Paul and Trümpler, G.
MULTI-WAVE POLAROGRAMS, I (Mehrstufige Polarogramme, I). [1962] 15p. 21 refs.
Order from SLA $1.60 62-14799

Trans. of Helvetica Chimica Acta (Switzerland) 1952, v. 35 [no. 3] p. 1021-1030.

DESCRIPTORS: *Azo radicals, *Phenyl radicals, *Polarographic analysis, Hydrogen ion concentration, Electrodes, Surfaces, Glass electrodes, Adsorption, Reduction, Organic compounds, Isomers, Wave analysis, Mercury electrodes.

A theory of multi-wave polarograms is developed on the basis of hydrogen ion impoverishment at the electrode surface. Qualitative relationships for shape and height of waves are derived and are experimentally tested for the case of azobenzene. (Author)

Rüetschi, P[aul] and Trümpler, G.
MULTI-WAVE POLAROGRAMS, II (Mehrstufige Polarogramme, II). [1962] 12p. 4 refs.
Order from SLA $1.60 62-14801

Trans. of Helvetica Chimica Acta (Switzerland) 1952, v. 35 [no. 5] p. 1486-1494.

DESCRIPTORS: *Azo radicals, *Phenyl radicals, *Acetic acids, *Hydrochloric acid, Acids, *Polarographic analysis, Hydrogen ion concentration, Electrodes, Surfaces, Dissociation, Wave analysis.

The theory of hydrogen ion impoverishment in the case of polarography of organic substances in insufficiently buffered solution is established in greater detail and is verified by additional experiments. The theory permits the calculation of multi-wave polarograms that agree with those found experimentally. It reproduces correctly; (1) the shape of the curve; (2) the dependence of curve shape on pH; (3) the effect of the dissociation constant of the buffer ions present. A method is described which permits the polarographic determination of ordinarily unreducible acidic compounds. This determination is successful even for compounds with very small dissociation constants (from 10^{-7} to 10^{-8}). (Author) (See also 62-14799)

Rüetschi, P[aul] and Trümpler, G.
MULTI-WAVE POLAROGRAMS, III (Mehrstufige Polarogramme, III). [1962] 23p. 12 refs.
Order from SLA $2.60 62-14800

Trans. of Helvetica Chimica Acta (Switzerland) 1952, v. 35 [no. 6] p. 1957-1970.

DESCRIPTORS: *Azo radicals, *Phenyl radicals, *Carboxylic acids, Acids, *Polarographic analysis, Hydrogen ion concentration, Dissociation, Reduction, Kinetic theory, Electrodes, Surfaces, Wave analysis, Organic compounds.

The theory of hydrogen ion impoverishment in insufficiently buffered solution is extended to dissociable substances and is tested experimentally in the instance of p-azobenzenemonocarboxylic acid. It is possible to calculate wave height and curve shape and to state the the effect of dissociation constants of depolarizer and product of reduction. The theory of Koutecky and Brdicka for kinetic waves in unbuffered solution is applied to p-azobenzenemonocarboxylic acid, and the rate constant for the association reaction between hydrogen ion and anion is determined. Rate constants determined by polarography are compared with those calculated on the basis of kinetic theory. Occurrences of two waves as result of buffer impoverishment and of dissociation are compared, and the characteristics of each are discussed. (Author) (See also 62-14801)

Skorokhodov, I. I., Golubev, V. B. and others.
HIGHER PEROXIDE OF HYDROGEN AND FROZEN RADICALS. 11 Apr 62 [13]p. 18 refs. FTD-TT-62-375.
Order from OTS $0.50 62-11710

Trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1962, v. 36, no. 1, p. 93-97.

DESCRIPTORS: *Hydrogen compounds, *Peroxides, *Free radicals, Synthesis, Electrons, *Paramagnetic resonance, Absorption spectra, Ozone, Liquefied gases, Hydrogen, Atoms, Water vapor, Dissociation, Condensation reactions, Spectrographic analysis.

An investigation was made of the electron paramagnetic resonance (EPR) spectrum of peroxide-radical condensates synthesized from dissociated water vapor and by the reaction of liquid 100% ozone with atomic hydrogen. A significant paramagnetic absorption was observed in both cases. The EPR spectra of both condensates are identical and complex, apparently because of the anisotropy of the g-factor of solid condensates. The radical concentrations in the peroxide-radical condensate synthesized from disocciated water vapor can vary considerably. This is associated with the lack of the condensate itself. In a condensate

synthesized from liquid ozone and atomic hydrogen this complication does not exist and the radical concentrations are completely stable. The condensates contain the HO_2 radical and its maximum concentration is about 0.4 wt.-%. (Author)

Starovskii, O. V.
THE PROBLEMS OF STRUCTURAL CHEMISTRY AT THE RIGA CONFERENCE (ON THE THEORY OF CHEMICAL STRUCTURE KINETICS AND REACTIVE ABILITY, 8-13 May 61). 15 May 62 [7]p. JPRS: 13810.
Order from OTS or SLA $1.10 62-24718

Trans. of Zhurnal Strukturnoi Khimii (USSR) 1961, v. 2, no. 5, p. 640-641.

DESCRIPTORS: *Molecular structure, Chemical reactions, Reaction kinetics, *Chemistry, *Conferences.

Strekalovskii, V. N., Bessonov, A. F. and others.
PHASE TRANSFORMATIONS DURING OXIDATION-REDUCTION OF URANIUM OXIDES. 27 Feb 62 [11]p. 12 refs. FTD-TT-62-107; AD-273 881.
Order from OTS or SLA $1.60 62-24942

Unedited rough draft trans. of #Fizika Metallov i Metallovedenie (USSR) 1961, v. 11, no. 3, p. 400-403.

DESCRIPTORS: *Uranium compounds, Oxides, Oxidation-reduction reactions, Decomposition, *Phase transitions, Phase studies, X-ray diffraction analysis, Reaction kinetics.

The kinetic investigations of the reduction processes of the higher oxides of uranium (UO_3 and U_3O_8) with hydrogen were supplemented by an X-ray analysis of the reduction products. In all cases no other types were formed except the solid solutions based on U_3O_8, U_4O_9, and UO_2. Tetragonal phases formed only at temperatures below 400°C in the oxidation processes of uranium dioxide with pure oxygen and atmospheric oxygen. The X-ray analysis confirmed that uranium dioxide is not oxidized in a CO_2 atmosphere. (Author)

Tananaev, I. and Talipov, S.
SOLUBILITY OF THE DOUBLE FLUORIDES OF ALUMINUM AND OF THE BASIC METALS, tr. by Bertha P. Klenova. 17 May 60, 4p. 3 refs. TVA-3862.
Order from OTS or SLA $1.10 62-24445

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1939, v. 9 [no. 13] p. 1155-1157.
Another trans. is available from SLA as RT-1600; an abstract trans. is available from OTS or SLA $1.10 in 62-14152 [1961] 5p.

DESCRIPTORS: *Sodium compounds, *Potassium compounds, *Aluminum compounds, *Fluorides, Solubility, Alkali metal compounds.

A method is described for the preparation of Na_3AlF_6, K_3AlF_6, and $(NH_4)_3AlF_6$, the compositions of which correspond exactly to the formulas. The solubilities of the three salts were determined at temperatures from 0° to 100°C. The solubility of Na_3AlF_6 and K_3AlF_6 increases markedly with temperature. The solubility curve of $(NH_4)_3AlF_6$ forms a maximum at about 50°C. (Author)

Temkin, M. I.
THE KINETICS OF AMMONIA SYNTHESIS UNDER HIGH PRESSURES. 19 Mar 52 [26]p. 16 refs.
Order from OTS or SLA $2.60 62-16039

Trans. of [Zhurnal Fizicheskoi Khimii] (USSR) 1950, v. 24, p. 1312-1325.
Another trans. is available in Dutch from OTS or ETC $1.89 as 61-17155, MTWL-523, 23p.

DESCRIPTORS: *Ammonia, *Synthesis, High pressure research, Chemical reactions, Theory, Chemical equilibrium.

The effect of gas non-ideality, of the change of adsorption with pressure, and of the change of the velocity constants of adsorption and desorption on ammonia synthesis was studied. It was shown that to change from the equation giving the velocity of the process at low pressures to the equation giving the velocity at high pressures it is necessary to replace the partial pressures of the gases with "volatilities" and to introduce the factor $\exp[-(\bar{V}_a - \alpha\bar{V}_s)P/RT]$, where $\bar{V}_s$ is the partial molar volume of the adsorbed nitrogen and $\bar{V}_a$ is the same for the activated complex during the adsorption of nitrogen. The change of the rate constant observed with a change in pressure corresponds to the theoretically expected change, assuming that $\bar{V}_s$ and $\bar{V}_a$ are close to the molar volume of nitrogen in the solid state. An approximate equation, facilitating calculations concerned with the kinetics of ammonia synthesis at high pressures was obtained. (Author)

Toropov, A. P. and Brodskaya, G. A.
THE QUANTITIES A AND $\mathcal{E}_o$ IN THE CORRECTED FORMULA OF G. M. PANCHENKOV FOR CALCULATING THE VISCOSITY OF LIQUIDS [AND] THE PAPER OF A. P. TOROPOV AND G. A. BRODSKAYA "THE CORRECTED G. M. PANCHENKOV EQUATION FOR THE CALCULATION OF THE VISCOSITY OF LIQUIDS", tr. by Bertha P. Klenova. 23 and 28 Nov 60, 10p. 9 refs. TVA-3885.
Order from OTS or SLA $1.10 62-24454

Trans. of #[Zhurnal Fizicheskoi Khimii] (USSR) 1960, v. 34, p. 1883-1884.

DESCRIPTORS: *Liquids, *Viscosity, Temperature, Determination, Errors, Corrections, Differential equations, Water, Tin compounds, Chlorides, Thiourea, Allyl radicals, Piperidines, Mercury.

The values of $\mathcal{E}_o$ and A' entering into G. M. Panchenkov's equation $\eta = A' \rho^{4/3} T^{\frac{1}{2}} (e^{\mathcal{E}_o/RT} - 1)$ for calculating the viscosity of liquids are functions of temperature and may acquire negative values, thus contradicting the physical meaning ascribed to them by the author. Accordingly, some of the theoretical

postulates with the aid of which Panchenkov substantiated his proposed equation reqire a revision. (Toropov and Brodskaya) It is impossible to agree with the methods used by Toropov and Brodskaya in the calculation of A' and ε_0 to prove their dependence upon the temperature and the results obtained by them from these calculations have no convincing motivation. (Pancheskov)

Veselovskii, V. I.
APPLICATION OF THE PHOTOELECTROCHEMICAL METHOD TO THE STUDY OF HETEROGENEOUS PHOTOSENSITIZERS OF THE ZINC OXIDE TYPE (Primenenie Svetozlektrokhimicheskogo Metoda k Issledovannyu Getrogennykh Fotosensi'illzatorov Tipa Zn0). [1962] [10]p. (foreign text included) 6 refs.
Order from OTS or SLA $1.10 62-16107

Partial trans. (excerpts) of Zhurnal Fizicheskoi Khimii (USSR) 1947, v. 21, no. 8, p. 983-985.

DESCRIPTORS: *Zinc compounds, *Oxides, *Photosensitivity, Photochemistry, *Electrochemistry, Photoelectric effect, Absorption spectra.

Voskoboinikov, I. M.
RADIATION IN A DETONATION. May 62 [3]p. 3 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1960, no. 1, p. 133-134.

DESCRIPTORS: *Explosives, TNT, RDX, PETN, Detonation, Temperature, *Detonation waves, *Thermal radiation, Shock waves.

Veselovskii, V. I.
SENSITIZATION MECHANISM OF THE PHOTOELECTROCHEMICAL PROCESS AT A ZINC-ZINC OXIDE ELECTRODE (Sensibilizatsionnyi Mekhanizm Fotoelektrokhimicheskogo Protsessa na Zn-Zno-Elektrode). [1962] [25]p. (foreign text included) 9 refs.
Order from OTS or SLA $2.60 62-16109

Partial trans. (excerpts) of Zhurnal Fizicheskoi Khimii (USSR) 1948, v. 22, no. 12, p. 1427-1442.

DESCRIPTORS: *Zinc electrodes, *Zinc compounds, *Oxides, Sensitivity, Photochemistry, Electrochemistry.

For abstract of original article see Chem. Abstracts 43: 2858h, 1949)

Vovkogon, A. P. and Fyalkov, Ya. A.
PHYSICOCHEMICAL INVESTIGATION OF THE SYSTEMS INDIUM CHLORIDE-CHLORIDES OF OTHER METALS, tr. by Lydia Venters. Nov 61, 11p. 25 refs.
Order from OTS or SLA $1.60 AEC-tr-4870

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, no. 11/12, p. 903ff.

DESCRIPTORS: *Indium compounds, Sodium compounds, Silver compounds, Cadmium compounds, Zinc compounds, Lead compounds, *Chlorides, Metallic compounds, Complex compounds, Alloys, Metals, *Physical chemistry, Chemistry.

By using the thermal analysis, the systems $InCl_3$-NaCl, $InCl_3$-AgCl, $InCl_3$-$CdCl_2$, $InCl_3$-$ZnCl_2$ and $InCl_3$-$PbCl_2$ were investigated within the total range of concentrations and the state diagrams were plotted. The following compounds were detected: in the system $InCl_3$-NaCl one compound of a composition $InCl_3 \cdot NaCl$ with a melting point at 730°; in the system $InCl_3$-AgCl also a single compound was detected: its composition is $InCl_3$-3AgCl with the melting point at 373°. The following eutectics were found: for the system $InCl_3$-NaCl with the melting point at 316°; for the system $InCl_3$-AgCl with the melting point at 369 and 329°; for the system $InCl_3$-$CdCl_2$ with the melting point at 476°; for the system $InCl_3$-$ZnCl_2$ with the melting point at 276°, and for system $InCl_3$-$PbCl_2$ with the melting point at 374°. (Author)

Zadumkin, S. N.
SURFACE TENSION AND HEAT OF SUBLIMATION OF SILICON, GERMANIUM AND TIN. [1961] 3p. 10 refs.
Order from OTS or SLA $1.10 AEC-tr-4938

Trans. of #Fizika Tverdogo Tela (USSR) 1959, v. 1, no. 4, p. 572-573.
Another trans. is available from ATS $4.00 as ATS-13N56R [1961] 3p.

DESCRIPTORS: *Silicon, *Germanium, *Tin, Heat of sublimation, Surface tension.

The following formulas were derived for the coefficient of surface tension σ and its temperature dependence:

$$\sigma = -\frac{\overline{\Delta f}}{f_{kv}} \overline{n}_s (3\,kT \ln 2 - L_o)$$

$$\frac{d\sigma}{dT} = -\left(3k \frac{\overline{\Delta f}}{f_{kv}} n_s \ln 2 + 2\alpha\sigma\right)$$

Here $\overline{\Delta f}/f_{kv}$ is the mean value of the relative number of missing neighbors ("anions") of a cation on the surface; n_s is the mean number of cations per 1 cm^2 of the metal surface; k is the Boltzmann constant; T, absolute temperature; L_o is the heat of sublimation at absolute zero (calculated per atom of metal); α is the thermal coefficient of linear expansion. (Author)

EARTH SCIENCES

GEOLOGICAL AND GEOGRAPHICAL SCIENCES: SELECTED ARTICLES. 1 Feb 62 [12]p. JPRS: 12414.
Order from OTS or SLA $1.60 62-15950

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR, Baku, Izvestiya, Seriya Geologo-Geograficheskikh Nauk [i Nefti] 1961, no. 3, p. 93-95 and 99-101.

DESCRIPTORS: *Geology, *Geography, Caspian Sea, Petroleum, Oils.

Contents:
Discussions of geological and geographical papers before various conferences, by E. M. Shikhlinskii and V. M. Aliev
Problem of the Caspian as a focus of attention, by V. M. Zhirnov
In the institute for the development of oil and gas fields in the Azerbaidzhanian SSR, by Yu. V. Sadykhov
In the Geographical Institute at the Azerbaidzhanian Academy of Sciences, by A. A. Aliev.

LITERATURE ON METEOROLOGY, HYDROLOGY AND OCEANOGRAPHY IN 1961 (CONTINUATION): ARTICLES IN JOURNALS AND COLLECTIONS. 21 May 62 [25]p. 100 refs. JPRS: 13806.
Order from OTS or SLA $2.60 62-24722

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 3, p. 61-64.

DESCRIPTORS: *Bibliography, *Meteorology, *Hydrology, *Oceanography.

Gulizade, M. P. and Makhmudov, D. M.
THE DERIVATION OF AN EQUATION FOR DETERMINING THE BUILD-UP IN ANGLE AND DIRECTION OF THE DEVIATION OF DIRECTIONAL WELLS, AS A FUNCTION OF PENETRATION, IN DRILLING WITHOUT A WHIPSTOCK. [1962] 7p.
Order from ATS $8.25 ATS-44N58R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 8, p. 37-44.

DESCRIPTORS: *Well drilling, Mathematical analysis.

Stratil-Sauer, Gustav.
GEOGRAPHICAL RESEARCHES IN EAST PERSIA, VOL. I: THE EAST PERSIAN MERIDIONAL ROUTE (Geographische Forschungen in Ostpersien, Bd. 1: Die Ostpersische Meridional Strasse) tr. by Claudius F. Mayer. [1958] [94]p. (14 illus. omitted) H-1448.
Order from OTS or SLA $8.60 59-12004

Trans. of Geographische Gesellschaft, Vienna. Abhandlungen (Austria) [1951] v. 17, no. 2, p. 5-85.

DESCRIPTORS: *Geography, *Iran.

Treshnikov, A. F.
SURFACE WATERS IN THE ARCTIC BASIN (Poverkhnostnye Vody v Arkticheskom Basseine) tr. by Richard M. Holden. May 60 [13]p. 5 refs.
AmMetSoc T-R-296+; AD-251 863.
Order from OTS or SLA $1.60 61-19021

Trans. of Problemy Arktiki (USSR) 1959, no. 7, p. 5-14.

DESCRIPTORS: Arctic regions, *Hydrology, Sea water, *Oceans, Salinity, Temperature, Surface properties.

Velev, D., ed.
SCIENTIFIC SESSION ON HYDROLOGY AND ON REGULATION OF WATER COURSES (RUNOFF) tr. by Claudius F. Mayer. [1958] [234]p. H-1628.
Order from OTS or SLA $15.50 59-11200

Trans. of mono. Nauchna Sesiya po Hidrologia i Regulirane na Ottoka, Sofia, 1957.

DESCRIPTORS: *Conferences, Water, *Hydrology, *Drainage, Control, Meteorology, Mathematical prediction, Inland waterways, Irrigation systems, *Bulgaria.

Yakovlev, G. N.
THE HEAT FLUX OF EVAPORATION FROM THE SURFACE OF THE ICE COVER IN THE CENTRAL ARCTIC (Tesplovoi Potok Ispareniya s Poverkhnosti Ledyanogo Pokrova v Tsentral'noi Arktike) tr. by Richard M. Holden. July 60 [7]p. 3 refs.
AmMetSoc T-R-305+; AD-251 866.
Order from OTS or SLA $1.10 61-19025

Trans. of Problemy Artiki i Antartiki (USSR) 1959, no. 1, p. 59-63.

DESCRIPTORS: *Arctic regions, *Ice, *Heat transfer, *Evaporation, Measurement, Humidity.

Climatology and Meteorology

ELECTRONIC FORECASTING IN THE LOWER ATMOSPHERE: SOVIET STUDIES. 14 May 62 [41]p. 29 refs. JPRS: 13734.
Order from OTS or SLA $4.60 62-24708

Trans. of mono. Materialy Konferentsii Koordinatsionnoi Kommissii Vychislitel'nykh Metodov Prognoza (Materials of the Conference of the Coordinating Commission of Numerical Forecast Methods) Leningrad, 1961, p. 56-62 and 71-87.

DESCRIPTORS: Atmosphere, *Weather forecasting, Electronic equipment, Wind, Digital computers, Conferences.

Contents:
Forecasting the geopotential field in the lower stratosphere, by A. S. Dubov
Numerical wind forecast in the free atmosphere by means of electronic digital computers, by A. I. Romov

USSR HYDROMETEOROLOGICAL STUDIES. 7 May 62 [84]p. 57 refs. JPRS: 13654.
Order from OTS or SLA $8.10 62-24378

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 2, p. 3-15, 23-30, 46-47, 62-67, 69-71.

DESCRIPTORS: *Hydrology, *Meteorology, Climate, Atmosphere, Glaciers, Mountains, Clouds, Oceanography, Precipitation, Thermal radiation, Albedo (Astronomy).

Contents:
Some means of modifying climate, by M. I. Budyko
Formation and changes in macrovortices in the atmosphere, by Vl. Sharov
Main features of the radiation regime of the glacial cover in Franz-Josef Land, by V. A. Markin
Universal formula for estimating global radiation, by M. S. Averkiev
Hydrometerological study of mountain regions, by I. A. Il'in
Physics of clouds, by A. M. Borovikov and others: review of mono. Fizika Oblakov, Leningrad, 1961, by L. T. Matveev and A. M. Baranov
Literature on meteorology, hydrology and oceanography in 1961 (continuation)
Session of the Commission on Aerology of the World Meteorological Organization (no. 3) by K. T. Logvinov and A. Kh. Khrgyan.

Gregor, Zdenek and Krivsky, Ladislav.
LONG-PERIOD FLUCTUATIONS OF THE CIRCULATION IN THE ATLANTIC-EUROPEAN REGION AND THEIR RELATION TO SECULAR SOLAR ACTIVITY (Mnogoletnye Izmenenie Tsirkulyatsii Atlanticheskoo-Evropeiskoi Oblasti v Svyazi s Sekulyarnoi Solnechnoi Deyatel-nost'yu tr. by Valys Zilius. Sep 58 [58]p. 94 refs.
Order from OTS or SLA $5.60 59-12374

Trans. of [Ceskoslovenska Akademie Ved. Geofysikalni Ustav]. Geofysikalni Sbornik, 1957, no. 62, p. 165-215.

DESCRIPTORS: Atmosphere, *Air mass analysis, *Climate, Meterological data, Weather forecasting, *Solar disturbances.

The change of the frontal zone, which took place in the North Atlantic and European regions during the period 1900-1939, is given for individual typical months of the four seasons. The established variation of circulation in the investigated region represented in the form of a climatological frontal zone, is explained by the relation between it and the known climatic changes. The warming of the Arctic climate, and the climate of the polar and subpolar parts of the North Atlantic region and the North European region with its maximum manifestation during the period 1920-1939 was caused by a general increase in the mixing of air masses and is a result of the increased meridional temperature and pressure contrasts. However, the warming of the Scandinavian region and the region of Spitsbergen is the result of an increased frequency of the frontal zone, accompanied by an increased northward heat transfer. The established long-period variations of climate and circulation is explained by solar radiation connected with solar activity. Only secular changes of solar activity may produce energy deviations of solar emission, which in turn produce changes in the energy balance of the earth's atmosphere, for which solar radiation is to a greater degree directly responsible.

Hubschen, L.
A NEW INSTRUMENT FOR MOISTURE DETERMINATION ACCORDING TO THE DISTILLATION METHOD. [1962] 6p.
Order from K-H $7.50 K-H 11363-b

Trans. of Z[eitschrift fur] Lebensm[ittel]-Untersuch-[ung] u[nd] -Forsch[ung] (West Germany) 1960, v. 111, p. 371-373.

DESCRIPTORS: *Instrumentation, *Moisture, Moisture meters.

Kashin, K. I. and Pagava, S. T.
SIGNIFICANT MONTHLY ANOMALIES OF AIR TEMPERATURES OVER THE EUROPEAN TERRITORY OF THE USSR, tr. by S. Kotz. 1962, 116p. 2 refs. PL-480 Comm.
Order from OTS $1.25 61-11464

Trans. of mono. Issledovanie Znachitel'nykh Mesyachnykh Anomalii Temperatury Vozdukha na Evropeiskoi Territorii SSSR, Moscow, 1959 [130p.].

DESCRIPTORS: *Weather forecasting, Air, Temperature, Pressure, Periodic variations, *Air mass analysis, Weather stations.

This book reports on some results of an investigation into the relationship between air temperature anomalies over the European territory of the USSR in the initial and following months, with reference to the nature of large-scale atmospheric processes. The nature of the relationship between the distribution of the sign of air temperature anomaly in the initial and in the following three months is determined. The relationship between the intensity of disturbances in the natural atmospheric circulation and the distributions of the sign of air temperature anomalies in the two months following the initial month is deduced. Data are given showing the closeness of relationship between some types of tropospheric temperature and pressure fields in the initial month and the distribution of the sign and magnitude of the air temperature anomaly in the second month after the initial month. Forecasting conclusions are arrived at which can be used for the preparation of long-range forecasts of the monthly air temperature anomaly. The book is intended for wide circles of meteorologists, and especially for scientific and general workers in the field of long-range forecasting. (Soviet publisher's note)

Mihailescu, V.
A SKETCH OF THE LOCAL CLIMATE MAP OF THE RPR. 3 Feb 59 [12]p. (map omitted) 4 refs. JPRS L-1452-D.
Order from OTS or SLA $1.60 59-11438

Trans. of Academia Republicii Populare Romine. Buletin Stiintific. Sectia de Geologie si Geografie, 1957, v. 2, no. 3/4, p. 605-612.

DESCRIPTORS: *Climate, *Rumania, *Geography, Mountains, Precipitation, Rivers.

Geodesy

COLLECTION OF SCIENTIFIC, TECHNICAL, AND INDUSTRIAL ARTICLES ON GEODESY, CARTOGRAPHY, TOPOGRAPHY, AERIAL SURVEY, AND GRAVIMETRY, 1941, VOL. 1: [SELECTED ARTICLES]. [1962] [96]p. 5 refs. ACIC LD-53a.
Order from OTS or SLA $8.60 62-15532

Trans. of Sbornik Nauchno-Tekhnicheskikh i Proizvodstvennykh Statei po Geodezii, Kartografii, Topografii, Aeros"emki i Gravimetrii (USSR) 1941, v. 1, p. 3-19, 25-43, 46-49, 119-131.

DESCRIPTORS: *Geodesics, *Geodetic astronomy, Geodetic data, Instrumentation, Meteorology.

Contents:
Study program for first-order base line measurement data, by V. V. Danilov
Schreiber's method of angle measurement in first-order triangulation, by F. N. Krasovskii
Simplified traversing with D. I. Mendeleev's altimeter, by B. V. Troitskii
Auxiliary tables for the computation of astronomic observations, by S. A. Angelov
Adjustment of triangulation chains on adjacent areas, by D. A. Laurin
First experiments of practical work with elastic pendulums, by M. E. Kheifets.

COLLECTION OF SCIENTIFIC, TECHNICAL, AND INDUSTRIAL ARTICLES ON GEODESY, CARTOGRAPHY, TOPOGRAPHY, AERIAL SURVEY AND GRAVIMETRY, 1944, VOL. 3: [SELECTED ARTICLES]. [1962] [82]p. 2 refs. ACIC LD-53b.
Order from OTS or SLA $8.10 62-15595

Trans. of Sbornik Nauchno-Tekhnicheskikh i Proizvodstvennykh Statei po Geodezii, Kartografii, Topografii, Aeros"emki i Gravimetrii (USSR) 1944, v. 3, p. 3-40 and 68-69.

DESCRIPTORS: Geodesics, *Mapping, *Aerial photography, *Aerial reconnaissance, *Maps, Earth, Gravity, Geodetic data, Instrumentation.

Contents:
State topographical map on the scale of 1:100,000, by A. I. Mazishvili
Development of geodetic nets by the intersection method, by A. I. Durnev
Required accuracy in first-order baseline measurements, by V. V. Danilov.

COLLECTION OF SCIENTIFIC, TECHNICAL AND INDUSTRIAL ARTICLES ON GEODESY, CARTOGRAPHY, AERIAL SURVEY AND GRAVIMETRY, 1944, VOL. 5: [SELECTED ARTICLES]. [1962] [93]p. 1 ref. ACIC LD-53c.
Order from OTS or SLA $8.60 62-15528

Trans. of Sbornik Nauchno-Tekhnicheskikh i Proizvodstvennykh Statei po Geodezii, Kartografii, Topografii, Aeros"emki i Gravimetrii (USSR) 1944, v. 5, p. 24-65.

DESCRIPTORS: *Geodesics, *Geodetic astronomy, Geodetic data, *Maps, Mapping, *Earth, *Gravity, Geophysics, Aerial photography, Aerial reconnaissance.

Contents:
Astronomic-geodetic net of the USSR, by A. M. Virovets
High-precision and precision state leveling net, by A. V. Rytov
Gravimetrical work in the USSR, by A. A. Mikhailov
Stereotopographic work in map compiling to the scale 1:100,000, by B. V. Troitskii.

COLLECTION OF SCIENTIFIC, TECHNICAL, AND INDUSTRIAL ARTICLES ON GEODESY, CARTOGRAPHY, TOPOGRAPHY, AERIAL SURVEY AND GRAVIMETRY, 1949, VOL. 24: [SELECTED ARTICLES]. [1962] [55]p. 10 refs. ACIC LD-53d.
Order from OTS or SLA $5.60 62-15524

Trans. of Sbornik Nauchno-Tekhnicheskikh i Proizvodstvennykh Statei po Geodezii, Kartografii, Topografii, Aeros"emki i Gravimetrii (USSR) 1949, v. 24, p. 8-20, 35-38, 68-72, 76-82.

DESCRIPTORS: *Geodesics, Geodetic data, *Aerial photography, Aerial reconnaissance, *Maps, *Mapping, Terrain.

Contents:
Instructions for performing topographic surveys in unstudied and little-studied regions of the USSR, by V. F. Pavlov
Dynamic temperature coefficient of pendulums, by A. I. Frolov
TsNIIGAiK pseudocylindrical projection, by G. A. Ginzburg
Tables of corrections for entering and for reductions of the linear element value e=0.1 meter, by S. A. Angelov.

Bagratuni, G. V.
ON THE ACCURACY OF DISTANCES AND AZIMUTHS OBTAINED FROM THE SOLUTION OF THE INVERSE GEODETIC PROBLEM. [1961] [9]p. (3 figs. omitted) 8 refs. AERDL T-1081; RIS E-712.
Order from OTS or SLA $1.10 61-28941

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka](USSR) 1959, no. 3, p. 79-84.
Also available from RIS $15.00 as RIS E-712.

DESCRIPTORS: *Geodesics, Geodetic data, *Azimuth, Ellipsoids, Errors, Earth.

Hothmer, J.
JENA PHOTOGRAMMETRIC COURSE IN PRAGUE (1958) AND BUDAPEST (1961). 19 Jan 62 [7]p. JPRS: 12122.
Order from OTS or SLA $1.10 62-19718

Trans. of Bildmessung und Luftbildwesen (Germany) 1961, no. 3, p. 97-100.

DESCRIPTORS: *Aerial photography, Photography, *Mapping, Training, Geodesics, Instrumentation, Hungary, Czechoslovakia.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 3, P. 253-378. Mar 62, 1v. 276 refs.
Order from AGI $5.00, $55.00/year

Trans. of Akademiya Nauk SSSR. Geologicheskii Institut. Trudy, 1957, v. 6, p. 13-38 and 179-184; Priroda, 1961 [v. 50] no. 1, p. 41-50; Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1959, v. 2, p. 86-96, 110-135, 332-350; Izvestiya Vysshikh Uchebnykh Zavedenii Geologiya i Razvedka (USSR) 1960 [v. 3] no. 12, p. 88-97; and mono. Sovremennye Osadki Kaspiiskogo Morya, Moscow, 1956, p. 7-36.

DESCRIPTORS: *Geology, Periodicals, Geochemistry, Copper, Uranium, Ores, Diamonds, Deposits, Geophysical prospecting, Aral regions, Paleoecology, Geography, Sedimentation, Caspian Sea.

Contents:
Geochemistry of ancient landscapes, by A. L. Perel'man
Basic features of the metallogeny of copper, by V. S. Domarev
Geophysical prospecting methods used in locating the diamond deposits of Yakutia, by A. S. Varlamov and others
Some problems of the metallogeny of uranium, by A. I. Semenov
The structures of the ore districts, ore fields and ore deposits of the Rudnyi Altai, by G. F. Yakovlev
Outline of the geology and paleogeography of the Pavlodar section of the Irtysh Valley, the northern Aral region and the Turgai lowland, by E. D. Zaklinskaya
Sedimentation of the Caspian submarine slopeswithin Azerbaijan, Pt. 1, by M. V. Klenova Reference section.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 4, P. 379-504. Apr 62, 1v. 140 refs.
Order from AGI $5.00, $55.00/year

Trans. of Akademiya Nauk SSSR. Geologicheskii Institut. Trudy, 1959, v. 23, p. 5-17; Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1959, v. 2, p. 183-208; Sovetskaya Geologiya (USSR) 1961, no. 1, p. 49-64, 98-108, 121-127, 142-145; [Chishitsugaku Zasshi] (Japan) 1959, v. 65, no. 761, p. 71-79.

DESCRIPTORS: *Geology, Periodicals, Geochemistry, Rock, Paleoecology, Copper, Iron, Sand, Geography, Water, Transport properties, Lead, Zinc, Geophysical prospecting, Seismic waves, Piezoelectric effect, Caspian Sea, Marine animals, Metals.

Contents:
Upper paleozoic climatic regions in northwestern Eurasia, by N. M. Strakhov and others
Geologic regularities in the distribution of cúpriferous sandstones in central Kazakhstan and the northern Tyan' Shan, by V. M. Papov
Sovetskaya Geologiya in translation, 1961, no. 1: contents, critique, selected publication, availability of translations
Principal stages in the permian evolution of Asian marine basins and brachiopod fauna, by V. I. Ustritskii
Some laws governing the migration of copper, lead, and zinc in water, and their significance in prospecting, by E. E. Belyakova
Use of second-order electroseismic effects in electric prospecting, by N. N. Neishtadt
Commemorative events in Jan-Mar 61: review no. 29, by V. V. Tikhomirov and N. A. Voskresenskaya
Sedimentation on the Caspian submarine slope within azerbaijan, Pt. 2, by M. V. Klenova
On the Volcanic rocks in the Japanese paleozoic, I. Gotlardian and Devonian, by M. Minato and others
Reference section.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 6, P. 631-[756]. June 62, 1v. 119 refs.
Order from AGI $5.00, $55.00/year

Trans. of ##Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 56-61; Mineralogicheskii Sbornik (USSR) 1960, v. 14, p. 80-85, 184-194, 482-483; Geologiya i Geofizika (USSR) 1960, no. 3, p. 103-108; Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten', Otdel Geologicheskii (USSR) 1960, v. 35(65) no. 4, p. 22-28; Neus Jahrbuch für Mineralogie. Abhandlungen (West Germany) 1959, v. 93, May, p. 1-44; [Chishitsugaku Zasshi] (Japan) 1959, v. 65, no. 763, p. 222-226; and mono. Sovremennye Osadki Kaspiiskogo Morya, Moscow, 1956, p. 137-150 and 272-302.
##Another trans. is available from STS $7.80 as STS Trans-16, 25 Jan 62, 6p.

DESCRIPTORS: *Geology, Periodicals, Moon, Surfaces, Photographs, Minerals, Geochemistry, Meteorites, Rock, Ores, Penetration, Gamma rays, Clays, Petroleum, Carbonates, Sedimentation, Caspian Sea, Garnet.

#Contents:
##Structure of the moon's surface and investigation of the first photographs of its far side, by N. P. Barabashov
Formation conditions of anthophyllite, by V. S. Sobolev
Geochemical and mineralogic study of a stony meteorite from the vicinity of the village of Sevryukovo, by K. N. Savich-Zablotskii
On the question of the depth of penetration of rock strata and ores by the method of scattered gamma radiation, by E. M. Fillippov
Some features of alteration in clay minerals relative to oil formation, by I. D. Zkhus
Some carbonate sediments of the Caspian Sea, by V. F. Solov'ev
The garnet group: relation between mineral chemistry and rock type, by E. Tröger
Caspian sediments: geology of the southern and central parts of the Caspian Sea, by V. P. Baturin and E. K. Kopylova
On the volcanic rocks in the Japanese paleozoic, rept. 3: Permian, by Masao Minato and others
Review section
Reference section.

Abramova, A. L. and Abramov, I. I.
MOSSES FROM THE CHAUDA LAYERS IN THE SOUTH-WEST CAUCASUS (Mkhi iz Chaudinskikh Sloev Yugo-Zapadnogo Kavkaza). Mar 62 [7]p. 15 refs. RTS 2075.
Order from OTS or SLA $1.10 62-24310

Trans. of Leningrad U. Vestnik (USSR) 1959 [v. 14] no. 6, [Seriya Geologii i Geografii, no. 1]p. 144-147.

DESCRIPTORS: *Paleoecology, *Plants, Morphology, Rock.

Ammosov, I. I.
ALTERATION STAGES OF SEDIMENTARY ROCKS AND PARAGENETIC RELATIONS OF MINERAL FUELS. [1962] 17p.
Order from ATS $25.85 ATS-90P60R

Trans. of Sovet[skaya] Geol[ogiya] (USSR) 1961, no. 4, p. 7-24.

DESCRIPTORS: *Geology, *Rock, Sedimentation, *Minerals, *Fuels.

Arkhipov, N. S.
THE QUATERNARY SEDIMENTS OF THE WESTERN MARGINAL PART OF THE SIBERIAN PLATFORM WITHIN THE AREA BETWEEN THE YENISEI, NIZHNYAYA TUNGUSKA AND BAKHTA RIVERS, THEIR GENESIS AND STRATIGRAPHIC POSITION. 24 July 61, 25p. 28 refs.
Order from OTS or SLA $2.60 61-27737

Trans. of [Akademiya Nauk SSSR. Geologicheskii Institut. Trudy] 1959, v. 32, p. 97-114.

DESCRIPTORS: *Geology, *Geogony, *Sedimentation, Rocks, Glaciers, Paleoecology, Siberia.

Berenbeim, D. [Ya.].
RELATIONSHIP BETWEEN THE PERENNIAL FLUCTUATIONS OF THE WATER LEVEL OF THE BLACK SEA AND THE RIVER RUNOFF (Mnogoletnie Kolebaniya Urovnya Chernogo Morya i Rechnoi Stok). 1962, 5p. 7 refs. PL-480 Int.
Order from OTS $0.50 62-11020

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 1 [p. 44-46].

DESCRIPTORS: *Water, Hydrology, *Periodic variations, *Black Sea, Sea water, *Inland waterways.

Upon examining the fluctuations of the annual mean water levels of the Black Sea as recorded at the hydrometeorological stations of Odessa, Sevastopol', Kerch' and Poti for the period 1873 - 1940, it was noticed that, apart from the general rise of the water level, observed for the last 100 years and connected with the sinking of sea shores, there are quite considerable yearly water level fluctuations, recorded simultaneously at all hydrometeorological stations of the Black Sea. In some years the water level of the Black Sea proves to be higher than in others. These fluctuations of the water level are assumed to be caused by the fluctuations of the components of the sea-water balance, in particular by the annual variations of the amount of river runoff into the Black Sea.

Danchev, V. I.
METHOD OF STUDYING THE COLOR OF SEDIMENTARY ROCKS (O Metodike Izucheniya Tsveta Osadochnykh Gornykh Porod) tr. by June Stevens. Feb 61 [46]p. (foreign text included) 26 refs. Bureau of Reclamation Trans. 371.
Order from OTS or SLA $4.60 62-25125

Trans. of Akademiya Nauk SSSR. Izvestiya, Seriya Geologicheskaya, 1956 [v. 21] no. 7, p. 49-60.

DESCRIPTORS: *Geology, Sedimentation, *Rock, *Colors, Determination, *Photometers, Geophysical prospecting.

A short outline and critical appraisal of the methods of studying the color of sedimentary rocks is given. The photometric method is proposed for obtaining a quantitative characteristic of the color. A brief description of the photometer and procedures for its use are explained. Attention is called to the relationship between the color of sedimentary rocks and their material composition and to the possibility of using the color for genetic and research purposes. (Author)

Paczynski, Bronislaw.
USE OF THE SELF-POTENTIAL FOR THE DETERMINATION OF HYDROLOGIC PARAMETERS IN TEST PUMPING. [1962] 8p.
Order from ATS $16.75 ATS-16P61P

Trans. of Przeglad Geol[ogiczny] (USSR) 1961, v. 9, no. 4, p. 210-214.

DESCRIPTORS: *Pumps, *Hydrology, Determination tests, Geology.

Oceanography

Buljan, M.
THE FLUCTUATION OF TEMPERATURE IN THE OPEN WATERS OF THE ADRIATIC (Kolebanje Temperature Vode Otvorenog Jadrana). 1962, 17p. 3 refs. PL-480 Comm.
Order from OTS $0.50 60-21713

Trans. of Acta Adriatica (Yugoslovia) 1957, v. 8, no. 7, p. 1-26.

DESCRIPTORS: *Adriatic Sea, *Sea water, Temperature, *Oceanographic charts, Oceanographic data.

A survey is made of temperature conditions for the Adriatic as a whole, which provides data referring to various seasons and to a series of years.

Fedorovskii, E.
EXPLORING THE SECRETS OF THE SEA WITH THE "SEVERYANKA". 4 Jan 62 [7]p. (3 photos omitted). JPRS: 11780.
Order from OTS or SLA $1.10 62-15349

Trans. of Pentru Apararea Patriei (Rumania) 1961, v. 7, no. 11, p. 12-13.

DESCRIPTORS: *Marine biology, *Aquatic animals, *Fishes, *Herring, Oceanography.

Sychev, K. A.
THE HEAT CONTENT OF ATLANTIC WATERS AND THE EXPENDITURE OF HEAT IN THE ARCTIC BASIN (Teplosoderzhanie Atlanticheskikh Vod i Raskhodovanie Tepla v Arkticheskom Basseine) tr. by Richard M. Holden. Oct 60 [14]p. 14 refs. AmMetSoc T-R-336; AD-253 563.
Order from OTS or SLA $1.60 61-19521

Trans. of Problemy Arktiki i Antarktiki (USSR) 1960, no. 3, p. 5-15.

DESCRIPTORS: Arctic Regions, *Heat transfer, Atlantic Ocean, Climatic factors, Ice, *Ocean currents.

An attempt is made to examine the geographical distribution of the heat content of Atlantic waters in the Arctic Basin and to note the methods and regions of the expenditure of heat of these waters in an annual cycle. (Author)

Zore, M.
ON GRADIENT CURRENTS IN THE ADRIATIC SEA (O Gradijentskim Strujama Jadranskog Mora). 1962, 31p. 14 refs. PL-480 Comm.
Order from OTS $0.50 61-11200

Trans. from Acta Adriatica (Yugoslavia) 1956, v. 8, no. 6.

DESCRIPTORS: *Adriatic Sea, Ocean currents, *Oceanographical charts, Oceanographical data, Salinity, Temperature, Density.

Geopotential topographies for the Adriatic were computed from the data obtained by the Najade and the Ciclope expeditions conducted during 1911 to 1914. The geopotential anomalies and current velocities were computed from the temperature and salinity data by applying the Bjerknes theorem of circulation and the Helland-Hansen formula.

Physics of the Atmosphere

Fedorov, Yu. K.
TROPOPAUSE CHARACTERISTICS AT THE SOVIET ANTARCTIC STATION OAZIS (OASIS). 4 Feb 62, 3p. AID rept. 62-14.
Order from OTS or SLA $1.10 62-23702

Abstract trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 12, p. 27-31.

DESCRIPTORS: *Atmosphere, Wind, Temperature, Measurement, *Antarctic regions, *Meteorology, Cyclones.

Mirtov, B. A.
ROCKETS, SATELLITES, AND THE INVESTIGATION OF THE UPPER ATMOSPHERE. 19 Apr 62, 5p. AID Rept. 62-50.
Order from OTS or SLA $1.10 62-25156

Abstract trans. of Priroda (USSR) 1961 [v. 50] no. 10, p. 23-31.
A complete trans. is available from OTS or SLA $1.60 as 62-14557 [1962] [14]p.

DESCRIPTORS: *Rockets, *Satellite vehicles, *Upper atmosphere, Air mass analysis, Mass spectrometers, Ionosphere, Gases.

Seismology

Mozzhenko, A. N.
APPARATUS FOR MAGNETIC RECORDING OF EARTHQUAKES AND DISTANT EXPLOSIONS. 29 Jan 62, 2p. AID rept. 62-13.
Order from OTS or SLA $1.10 62-23693

Abstract trans. of Akademiya Nauk Turkmenskoi SSR, Ashkhabad. Izvestiya. Seriya Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, 1961, no. 1, p. 33-38.

DESCRIPTORS: *Earthquakes, Explosions, Mobile, *Magnetic recording systems, *Seismological stations, Seismographs.

This portable station is composed of two separate component units: the magnetic field recording unit and the unit for readout and graphic recording.

Savarenskii, E. F., Tishchenko, V. G. and others
THE TSUNAMI OF 4-5 NOV 52. [1962] [60]p. (23 figs. omitted) 12 refs.
Order from OTS or SLA $5.60 62-16173

Trans. of [Akademiya Nauk SSSR. Sovet po Seismologii. Byulleten'] 1958, no. 4, p. 1-60.

DESCRIPTORS: *Ocean waves, *Underwater explosions, *Earthquakes, Disasters, Ocean bottoms, Tides, Seismological stations.

Savarenskii, E. F.
THE TSUNAMI PROBLEM (A GENERAL REPORT ABOUT TSUNAMIS). [1962] 6p.
Order from OTS or SLA $1.10 62-16170

Trans. of [Akademiya Nauk SSSR. Sovet po Seismologii. Byulleten'] 1956, no. 2, p. 3-7.

DESCRIPTORS: *Ocean waves, *Underwater explosions, *Earthquakes, Ocean bottoms, *Seismic waves.

Solov'ev, S. L. and Ferchev, M. D.
SUMMARY OF DATA ON TSUNAMIS IN THE USSR. [1962] [45]p. 80 refs.
Order from OTS or SLA $4.60 62-16172

Trans. of [Akademiya Nauk SSSR. Sovet po Seismologii. Byulleten'] 1961, no. 9, p. 23-55.

DESCRIPTORS: *Ocean waves, *Earthquakes, Seismological stations, Ocean bottom, Volcanoes, Disasters.

Svyatlovskii, A. E.
TSUNAMIS (DESTRUCTIVE WAVES ORIGINATING WITH UNDERWATER EARTHQUAKES IN SEAS AND OCEANS). [1962] [52]p. (9 photographs omitted) 27 refs.
Order from OTS or SLA $5.60 62-16171

Trans. of mono. Tsunamis, Moscow, 1957.

DESCRIPTORS: *Ocean waves, *Underwater explosions, Disasters, *Earthquakes, Ocean bottom, Seismic waves, Seismological stations, Oceans, Tides, Volcanoes.

ENGINEERING

Kanfor, S. S.
HULL STEEL. 6 June 62 [462]p. 43p refs. JPRS: 14034.
Order from OTS or SLA $23.50 62-25043

Trans. of mono. Korpusnaya Stal', Leningrad, 1960, 376p.

DESCRIPTORS: *Steel, *Ship plates, *Sheets, *Ship hulls, Welding, Metallurgy, Fracture (Mechanics), Deformation, Mechanical properties, Physical properties, Selection, Specifications, *Ships, Construction, *Marine engineering.

The present work analyzes the properties and fields of application of carbon and low-alloy ship-hull plate steel of various grades manufactured in both the Soviet Union and abroad. Particular attention is given to problems dealing with the interaction of individual properties and the effect on them of various external and internal factors. Deformability, resistance to brittle failure and other essential properties of welded hull plate are discussed in detail. The book is designed for engineering, technical, and scientific personnel of the shipbuilding industry and other industrial fields associated with the problems of physical metallurgy of carbon and low-alloy structural steel. (Soviet publisher's note)

Kenigsberg, V. L. and Yurovskii, A. Ya.
THE PROBLEM OF DESIGNING A STANDARDIZED SYSTEM OF METERS. 26 Apr 62 [12]p. JPRS: 13582.
Order from OTS or SLA $1.60 62-24399

Trans. of #Priborostroenie (USSR) 1962, no. 2, p. 3-5.

DESCRIPTORS: Instrumentation, *Meters, Standards, Design.

[Leonhardt, Fritz].
RECENT GERMAN PRESTRESSED CONCRETE BRIDGES WITH CONCENTRATED TENDONS [AND] FAN ANCHORAGES FOR LARGE PRESTRESSING CABLES. [1961] 47p.
Order from SLA $4.60 61-18982

Trans. of de Ingenieur (Netherlands) 1957, v. 69, no. 20, p. BT45-BT53.

DESCRIPTORS: *Bridges, *Concrete, *Wire, Beams, Construction, Friction, Reduction, Girders, Reinforcing steel, Jacks (Mechanics), Circular coils, Anchors, Germany.

Mel'nikov, L. A. and Andreev, V. I.
A DEVICE FOR MAGNETIC LOGGING OF DRILL HOLES. June 62.
Order from HB $3.50 HB-4781

Trans. of Russian patent 135,157, appl. no. 671542/22 27 June 60.

DESCRIPTORS: *Well logging, *Mining engineering, *Magnetic recording devices.

Nagel, R.
EFFECTS OF ERRORS OF MEASUREMENT ON THE ASSESSMENT OF THE DEGREE OF DUST ELIMINATION. May 62.
Order from BISI £4 15s BISI-2818

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1955 [v. 97] no. 7, p. 17-23.

DESCRIPTORS: *Particles, Measurement, Separation.

Svetov, B. S. and Pris, G. V.
METHOD OF MEASURING A MAGNETIC FIELD IN INDUCTION SYSTEMS OF ELECTRICAL PROSPECTING. June 62.
Order from HB $2.50 HB-5106

Trans. of Russian patent 136,481, 10 Aug 60.

DESCRIPTORS: *Magnetic fields, *Induction systems, *Mining engineering, *Geophysical.

Aeronautical Engineering

Alekseev, S. M., Balkina, Ya. B. and others.
CONTEMPORARY MEANS OF EMERGENCY ESCAPE FROM AN AIRPLANE: CHAPS. II AND VIII. 1 May 62 [92]p. FTD-TT-62-154.
Order from OTS or SLA $8.60 62-24927

Unedited rough draft trans. of mono. Sovremennye Sredstva Avariinogo Pokidaniya Samoleta, Moscow, 1961, p. 24-68 and 290-306.

DESCRIPTORS: *Ejection seats, Construction, Design, Aircraft seats, Catapults, Protective clothings, Parachute descents, Cockpits, *Aviation safety, *Bailout, Pilot seats, Safety harness, Jettisonable cockpits, Control systems, Human engineering.

Contents:
Fundamental construction elements of ejection seats
Escape at high speeds from high and low altitudes.

Kibardin, Yu. and Gallai, M.
BARRIER OF THE UNKNOWN (Bar'yer Neizvestnosti). Apr 62, 3p. AID Rept. 62-56.
Order from OTS or SLA $1.10 . 62-25153

Abstract trans. of Znanie-Sila (USSR) 1962 [v. 37] no. 3, p. 17-19.

DESCRIPTORS: Aircraft, *Rocket planes, Launching, Landing, Photographs.

The carrier plane lifts the rocket plane to an altitude of 20 km, where it begins independent flight. At an altitude of 92 km, it reaches a speed of 5200 km/hr. The rocket plane is not equipped with any type of conventional landing gear; therefore, for landing, it makes an aerial hook-up with the carrier plane and they land together. (Extract)

Chemical Engineering

A PLANT FOR THE PRODUCTION OF CHLORINATED PRODUCTS OF METHANE BY THE MONTECATINI PROCESS. 21 Feb 56, 6p.
Order from SLA $1.10 62-14080

Trans. of mono. Montecatini Section for Projects and Studies Relation no. 1166, Milan, 16 Feb 55.

DESCRIPTORS: *Industrial plants, *Chlorine compounds, *Methanes, Chloroform, Carbon tetrachloride, Hydrochloric acid, *Chemical industry, Industrial production, Costs.

Eru, I. I., Lange, A. A. and others.
HYDROGENATION OF COAL TAR FRACTIONS: HYDROGENATION OF NAPHTHALENE AND NAPHTHALENE-CONTAINING OILS. [Monthly] rept. no. 12 on AID Work Assignment no. 28. 9 May 62 [2]p. AID Rept. 62-59.
Order from OTS or SLA $1.10 62-25150

Abstract trans. of #Koks i Khimiya (USSR) 1961, no. 5, p. 44-46.

DESCRIPTORS: *Coal tar, Fractionation, Hydrogenation, *Naphthalenes, Oils.

Optimum conditions were sought for naphthalene hydrogenation under the lowest possible pressure and the lowest possible content of both unreacted naphthalene and fully hydrogenated decalin. Pressed naphthalene, naphthalene pressing filtrate, and a methylnaphthalene fraction were tried. The hydrogenation was conducted on Mo-Co or Mo-Ni sulfide catalysts supported by carbon or aluminum oxide under 75 to 100 atm at 340 to 360°C. An increase of decalin yield in the end product resulted when pressure exceeded 100 atm or when temperature was increased to 380°C. In an attempt to replace hydrogen with coking gas, an increase in pressure to 125 to 150 atm or a lowering of the production rate was necessary to obtain a hydrogenation product close to the optimum composition of 75% tetralin, 15% decalin, and 10% unreacted naphthalene. Due to their inhibiting effects, nitrogen and oxygen compounds must be removed from the initial material prior to hydrogenation. The inhibiting effect of nitrogen basic compounds is explained by their low reactivity and adsorption on the catalyst, which results in shielding its active surface. Naphthalene and methylnaphthalene fractions of coal tar can be used successfully in the manufacture of the tetralin-type industrial solvent by hydrogenation. (Extracted)

Groth, B. and Reinhall, R.
CONSIDERATIONS ON THE PROBLEM OF WHITE WATER WITH THE WET METHOD PRODUCTION OF FIBRE BOARD. Jan 62, 5p. (4 figs. omitted) 6 refs.
Order from SLA $1.10 62-14480

Trans. of Norsk Skogind[ustri] (Norway) 1961, v. 15, no. 3, p. 112-116.

DESCRIPTORS: *Fiberboard, Production, *Water supplies, Contamination, Carbohydrates, Purification, Hydrolysis, Separation.

Data are presented on (1) the character of white water, (2) the composition of the dissolved substances, and (3) the separation and utilization of the dissolved substances.

Kislykh, V. I. and Shishakov, N. V.
CATALYTIC EFFECT OF GASIFICATION IN A FLUIDISED BED. [1962] [9]p. 7 refs. NCB Trans. A. 1966/SEH; NLL M. 3482.
Order from OTS or SLA $1.10 62-23953

Trans. of Gaz[ovaya] Prom[yshlennost'] (USSR) 1960, v. 5, no. 8, p. 15-19.

DESCRIPTORS: *Fluidized solids, *Charcoal, *Coal gas, Production, Catalysts, Sodium compounds, Chlorides, Catalysis, Temperature, Steam, Decomposition, Fuels, Chemical reactions.

The results of the investigation of the effect of temperature on gasification in a fluidised bed with a catalyst made it possible to calculate the apparent activation energy of the process of decomposition of steam, which was 2400 kcal/mole without a catalyst and 11700 kcal/mole when sodium chloride was used. The order of the reaction is close to zero with respect to the concentration of steam. (Extract)

Reznik, I. D., Cushchina, I. S., and Evdokimenko, A. I.
ECONOMIC EFFECT OF BLAST HEATING IN SHAFT FURNACE SMELTING OF OXIDIZED NICKEL ORES (Ekonomicheskaya Effektivnost' Podogreva Dut'ya pri Shakhtnoi Plavke Okislennykh Nikelevykh Rud). Mar 62 [4]p. 1 ref. RTS 1938.
Order from OTS or SLA $1.10 62-24287

Trans. of Tsvetnye Metally (USSR) 1959, v. 32, no. 11, p. 31-32.

DESCRIPTORS: Blast furnaces, Heating, Shafts, *Nickel, Ores, *Smelting, Economics.

Calculations show that hot-blast shaft smelting of oxidized nickel ores is a highly effective method which pays for itself in a very short time and does not require high capital outlay. On the basis of the data for experimental-industrial smelting and on the calculations of the economics, planning and erection of an industrial oil-fired hot-blast stove is recommended, with provision for its future conversion to natural gas firing. (Author)

Electrical and Electronic Engineering

ELECTRICAL TECHNOLOGY ARTICLES. 10 Aug 61 [28]p. 2 refs. JPRS: 8713.
Order from OTS or SLA $2.60 62-24546

Trans. of Elektrie (Germany) 1961, v. 15, no. 3, p. 78-81 and 92-96.

DESCRIPTORS: *Metal coatings, Coatings, Copper, Nickel, Thickness, Determination, Electrolytes, Non-destructive testing, Test equipment, Electrical equipment, *Sewage, Treatment, Ion exchange, *Ion exchange resins.

Contents:
Determination of the thickness of combined copper-nickel layers according to the jet method, by W. Zimmer
Treatment of acidiferous galvanic sewage by means of ion exchangers, by W. Finkenwirth.

INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, CONGRESS NO. 1: SUBJECTS OF DISCUSSION. 30 Nov 61 [276]p. JPRS: 11299.
Order from OTS or SLA $17.50 62-19555

Trans. of Archiwum Automatyki i Telemechaniki (Poland) 1961, v. 6, no. 2/3, p. 143-356.

DESCRIPTORS: *Conferences, Automatic, Control, *Control systems, Linear systems, Nonlinear systems, Theory, Feedback, Digital computers, Computers, Switching circuits, Simulation, Analog computers, Hydraulic servomechanism, Pneumatic servomechanism, Servomechanisms, Pneumatic devices.

Contents:
Introduction
Theory of linear automatic control systems, by Henryk Gorecki
Multidimensional control systems, by Stanislaw Paszkowski
Invariance principle in control theory, by Kazimierz Manczak
Problems of nonlinear control systems theory, by Adam Macura
Theory of sampled-data control systems, by Andrzej Straszak
Optimum systems of automatic control, by Roman Kulikowski
Theory of adaptive control systems, by Andrzej Straszak
Problems of peak-holding (extremal) control systems, by Kazimierz Manczak
Theory of switching systems structure, by Zbigniew Frydrych
Mathematical papers of the IFAC Congress (no. 1) by Stefan Ziemba
Simulation and analog computers, by Wladyslaw Findeisen
Theory of hydraulic and pneumatic control devices, by Henryk Leskiewicz
Bulletin of the Automatic Control Institute of the Polish Academy of Sciences.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, 23 May 62 [247]p. JPRS: 13849.
Order from OTS or SLA $16.00 62-24978

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1961, v. 4, no. 6, p. 627-734.

DESCRIPTORS: *Education, *Radio, *Electrical engineering, Electricity, Microwave oscillators, Digital computers, Excitation, Transients, Damping, Ferromagnetism, Hysteresis, Circular coils, Voltage, Electrical networks, Functions, Phase shifters, Voltage amplifiers, Radar signals, Detection, Probability, Radiofrequency amplifiers, Electronic circuits, Pulse amplifiers, Electron tubes, Interference, Signal-to-noise ratio, Communication systems, Data storage systems, Data transmission systems, Integral transforms, Radiofrequency power, Stability, Generators, Microwave equipment, Control systems, Automatic, Servomechanisms, Photomultipliers, Electrodes, Electron beams, Linear systems, Diodes, Proton accelerators, Semiconductors, Grinding wheels, Coding, Pulse modulation.

Contents:
On the possibility of using microwave self-oscillators as regenerative amplifiers, by I. V. Lebedev and Ch'en Choung-mou
On the theory of dynamic processes in a parametron based on the n-p junction capacitance, by V. I. Samoilenko and E. M. Zlochevskii
Calculation of the reversal of magnetization with account of the surface and the dynamic properties of the substance, by K. M. Polivanov and others
Plot of linear amplifier with complex load, by J. Forejt
Concerning the calculation of the probability of detecting signals from a radar station for a random search, by F. P. Tarasenko
Distribution of the Transient time between the output and preliminary stages of an amplifier, by E. N. Mokhov
Concerning the reception of pulsed signals by storage method, by N. F. Vollerner and others
Optimal discretization of two-dimensional messages by N. K. Ignat'ev
Optimal discretization of multi-dimensional communications, by E. L. Blokh and N. K. Ignat'ev
Stability of power of a microwave generator within a frequency band, by V. B. Ostashevkii
Functional converter that reads graphic functions from charts of automatic recorders, by A. I. Petrenko

Choice of shape of collector electrodes in electron beam type O devices, operating with recuperation of electron energy, by V. P. Taranenko and M. V. Derenovskii

Pre-emphasis of electric signals in linear systems, by A. I. Naidenov

High-speed scaler unit using junction diodes, by V. N. Bryunin

High power pulsed self-oscillator, by L. I. Bolotin and others

Electronic device for coplanar motion of a plane with high degree of accuracy, by A. Ya. Akmentyn'sh

Interference immunity and carrying capacity of five-symbol code with phase-pulse modulation, by V. I. Kulya.

SOVIET RESEARCH AND DEVELOPMENT ON ENERGY STORAGE, TRANSFER, AND CONVERSION IN ORGANIC MATERIALS. Apr 61 [71]p. 260 refs. PAL 62-30.
Order from OTS $2.00 62-11705

DESCRIPTORS: *Organic materials, *Semiconductors, *Luminescence, *Scintillation counters, Electrets, *Electrostatics, Piezoelectric materials, Ferroelectric materials, Photoelectric materials, *Electrochemistry, *Power supplies, *Fuel cells, Storage batteries, Photochemistry, Energy, Storage, Heat, Light, Electricity, *Electric power production, Electrical conductance, Excitation, Bibliography.

Soviet technical literature of the years 1956 through 1960 was surveyed to evaluate their research and development on energy storage, transfer, and conversion in organic materials. The Soviet state of the art is discussed with respect to organic semiconductors, luminescence research, organic scintillators, electrostatic devices, organic cathode batteries, fuel cells, and photogalvanic cells.

Baramidze, V. A. and Gol'dreer, I. G.
AUTOMATIC, ELECTRONIC, D. C. BRIDGE. May 62 [4]p. 3 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of #Priborostroenie (USSR) 1960, no. 11, p. 3-5.

DESCRIPTORS: Automatic, Direct current, *Electric bridges, Design.

Carbon, Rene.
TEMPERATURE DETECTOR FOR JOURNAL BOXES, ESPECIALLY FOR RAILROAD EQUIPMENT, tr. by J. R-P. 2 May 62, 6p. (1 fig. omitted).
Order from OTS or SLA $1.10 62-25026

Trans. of French patent 1,188,967, gr. 3, cl. 4, internat. cl. B 61f, by Conservatoire National des Arts et Métiers, appl. filed 24 Dec 57, granted 16 Mar 59, pub. 28 Sep 59.

DESCRIPTORS: *Temperature, *Detectors, Railroad cars, Locomotives, Thermistors, Transistors, *Temperature warning system, Electrical equipment.

This temperature detector for journal boxes, especially in railroad equipment, comprises a thermistor which is especially resistant mechanically, located in the half bushing of the box, a transistor amplifier for amplifying the variations of current through the thermistor as a result of variations of the box temperature, and signalling means actuated by the amplified current when the latter attains a maximum value corresponding to the highest admissible temperature for the journal box. These signalling means are constituted by a measuring relay with moving coil having adjustable "minimum" and "maximum" contacts with the maximum contact controlling an alarm device, or a device for recording temperature variations. Means are provided for compensating the variations of the functioning characteristics of the transistor as a function of the ambient temperature. (Author)

Danilov, O.
PERPETUAL ENERGY. 4 June 62, 7p. JPRS: 13995.
Order from OTS $0.50 62-11674

Trans. of Ukraina (USSR) 1961, no. 24, p. 17-18.

DESCRIPTORS: *Solar energy, Sun, *Solar batteries, Power plants, Electric power production, Urban areas, Heating.

Some of the possibilities of utilizing solar energy are considered. It is announced that Soviet scientists are working on plans for heating entire cities by the sun and that a helio-electric power station is to be built in the Ararat Valley of the Armenian SSR.

Dordevie, Bozidar.
A NEW METHOD FOR STORING ENERGY FOR INTERCONNECTED SYSTEMS. [1959] [17]p. C. E. Trans. 1193; [DSIR NLL] M. 420.
Order from OTS or SLA $1.60 59-22489

Trans. of [paper presented] at W[orld] P[ower] Conf., Belgrade, 1957, 11th Sectional meeting, no. B1/36.

DESCRIPTORS: *Electricity, *Storage, *Power plants, Gas turbines, Turbines, Hydroelectric power systems, Thermodynamics, Costs, Energy, Hydraulic accumulators.

Feld'baum, A. A.
SELF-ADAPTIVE SYSTEMS. 27 Mar 62 [186]p. 26 refs. JPRS: 13190.
Order from OTS or SLA $13.00 62-23778

Trans. of mono. Vychislitel'nye Ustroistva v Avtomaticheskikh Sistemakh (Computer Components in Automatic Systems) Moscow, 1959, chap. 14, p. 634-700 and 787-788.

DESCRIPTORS: Automatic, *Control systems, Synthesis, Feedback, Operation, Transients, Blast furnaces, Open hearth furnaces, Electric arcs, Rolling mills, Machines, Chemical industry, Control, Probability, Digital computers, Computers, Linear programming, Scheduling.

Information is summarized on: (1) the most important types and applications of self-adaptive systems; (2)

principles of the simplest extremal system; (3) automatic optimizers and synthesizers; and (4) indirect methods of optimization.

Klapchuk, L. D.
A NEW METHOD OF SUPERVISING THE BEARING CURRENTS OF TURBO-GENERATORS (Novyi Sposob Kontrolya Podshipnikovykh Tokov Turbogeneratov) tr. by V. Burdon. [1 Apr 61 [5]p. Trafford Park trans. no. 2876; NLL M. 3337.
Order from OTS or SLA $1.10 62-23930

Trans. of Elekt[richeskie] Stantsii (USSR) 1960 [v. 31] no. 6, p. 78-79.

DESCRIPTORS: *Turbines, *Generators, *Gearings, *Electric currents, Electric insulation, Power plants, Electrical equipment.

A short description is given of the new method of supervising the bearing currents of turbo-generators.

Krasovskii, A. A.
STATISTICAL DYNAMICS OF SYSTEMS WITH PROPORTIONAL EXTREMAL CONTROL OF IN-LINE CORRECTING DEVICES, tr. by Lofti A. Zadeh. May 62 [5]p. 6 refs.
Order from ARS in Its journal, v. 32, no. 5, $3.00

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya: Energetika i Avtomatika, 1960, no. 4, p. 121-129.

DESCRIPTORS: *Control systems, Dynamics, Statistical processes, Errors, Corrections, Circuits, Stability.

Marchuk, P. M.
OBSERVATIONS ON THE WORKING OF A DIODE WITH A TUNGSTEN CATHODE IN VAPORS OF CESIUM AT LOW PRESSURE. [1962] 20p.
Order from K-H $25.00 K-H 10115

Trans. of [Akademiya Nauk SRSR, Kiev. Instytut Fizyky. Trudy, 1956, v. 7, p. 3-16].
Another trans. is available from LC and SLA mi$2.40, ph$3.30 as 60-18883 [1960] 13p.

DESCRIPTORS: *Diodes, *Cathodes (Electron tubes) Filiments, *Cesium, Vapors, *Tungsten, Electron tubes, *Magnetic fields.

For abstract see Technical Translation 5: 75, 1961.

Popov, S. N.
THE ROLE OF THE EMISSION CHANNEL IN AN ION SOURCE. 22 Mar 62 [13]p. 13 refs.
FTD-TT-62-435; AD 274 061.
Order from OTS or SLA $1.60 62-24030

Unedited rough draft trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1961, v. 31, no. 12, p. 1431-1438.

DESCRIPTORS: *Ionic current, Anodes, Thermionic emission, Secondary emission, Space charges, *Plasma physics, Gas discharges.

The ion current selected from a plasma source is limited by the space charge. The maximum ion-current density per emission-channel cross section is attained for those values of V_a when the plasma-emission boundary is within the emission channel. Knowing the distribution of the average plasma density in the emission channel, and the electron temperature, we can calculate approximately, on the basis of equations for given R, the value of the selection current I_r, the current density in the emission channel j, and the useability of the working gas γ. (Author)

Presnyakov, A.
THE ELECTRONIC BRAIN IN THE SERVICE OF MAN. 9 May 62 [7]p. JPRS: 13702.
Order from OTS or SLA $1.10 62-24735

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 8[29].

DESCRIPTORS: *Cybernetics, Automation, Electronic systems.

Probst, Gerhard.
ACHIEVEMENTS OF THE RADIO WORKERS IN 1961 AND TASKS FOR 1962. 21 May 62 [18]p. JPRS: 13823.
Order from OTS or SLA $1.60 62-24714

Trans. of Deutsche Post (East Germany) 1962, v. 7, no. 2, p. 33-37.

DESCRIPTORS: *Radio. *Personnel, Television, Radio broadcasting, Radio communication systems.

Tokarev, B. F.
COMMUTATION IN MULTISTAGE DIRECT FIELD ROTARY AMPLIFIERS (Kommutatsiya v Mnogostupenchatykh EMU Prodol'nogo Polya) tr. by V. Burdon. 11 May 61 [18]p. (foreign text included) 3 refs.
Trafford Park trans. no. 2886; NLL M. 3353.
Order from OTS or SLA $1.60 62-23940

Trans. of Elektrichestvo (USSR) 1959, no. 7, p. 13-18.

DESCRIPTORS: *Commutators, *Amplifiers, *Armature coils, Electric currents, Conductivity, Electric machinery, Direct current.

A description is given of the method of calculating the commutation and the commutating poles in multistage direct field rotary amplifiers.

Zolotarev, T. L., Lifshits, L. S., and Tarasenko, Yu. M.
PROBLEMS OF THE EFFECT OF WATER-TURBINE GOVERNING ON THE DYNAMIC STABILITY OF THE GENERATOR (Voprosy Vliyaniya Regulirovaniya Gidroturbiny na Dinamicheskuyu Ustoichivost' Generatora) tr. by V. Burdon. 17 Nov 61 [11]p.
Trafford Park trans. no. 2946; NLL M. 3586.
Order from OTS or SLA $1.60 62-24675

Trans. ot Elekt[richeskie] Stantsii (USSR) 1960 [v. 31] no. 11, p. 36-40.

DESCRIPTORS: *Hydroelectric power systems, *Electric power production, Turbines, Generators, Water, Stability.

The application of the emergency governing system of the power of a water-turbine as a means of increasing its dynamic stability makes possible an increase in the reliable operation of the power system from the point of view of maintaining the hydrogenerators in synchronism. (Associated Electrical Industries abstract)

Mechanical Engineering

Elizarov, D. P.
STRESSES IN THE FLANGE COUPLING OF A STEAM LINE FOR HIGH STEAM PARAMETERS DURING HEATING (Napryazheniya vo Flantsevom Soedinenii Paroprovoda Vysokikh Parametrov para pri Progreve) tr. by D. R. H. Phillips. 21 Apr 61 [14]p. (foreign text included) 2 refs. Trafford Park trans. no. 2857; NLL M. 3328.
Order from OTS or SLA $1.60 62-24658

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 4, p. 33-38.

DESCRIPTORS: *Flanges, *Couplings, Stresses, *Steam pipes, Pipes, Boilers, Steam, Heating, Operation.

An investigation was made of the stresses occurring in a flange coupling to determine the reasons for leaks in certain operating conditions.

Levchenko, B. L.
FLUCTUATIONS IN STEAM TEMPERATURE AND LOAD OF STEAM TURBINES. [1961] [9]p. 6 refs. C. E. Trans. 2173; [DSIR NLL] M. 4666.
Order from OTS or SLA $1.10 62-19144

Trans. of Elekt[richeskie] Stantsii (USSR) 1960, v. 31, no. 12, p. 37-41.

DESCRIPTORS: *Steam turbines, Boilers, Steam, Temperature, Heat transfer.

Fluctuations in steam temperature and load cause considerable variation in the thermal and stress state in various turbine components. Fluctuations in steam temperature and load lower the heat resistance of turbine metal when working under high pressure and temperature. When designing and operating boilers it is necessary to pay special attention to reducing the frequency and amplitude of steam temperature fluctuations to the minimum. When operating high pressure turbines it is advisable, in order to maintain the frequency in the power system, to do so with the largest possible number of turbines, so that the extent of load fluctuation is minimum for each turbine. (Author)

Reinel, H.
WELDED SHEET CONSTRUCTION OF VERTICAL STAND ROLLER HOUSINGS. June 62.
Order from BISI £3 BISI-2691

Trans. of Maschinenbautechnik (Germany) 1959 [v. 8, no. 5] p. 230-236.

DESCRIPTORS: *Sheets, Welding, Construction.

Ordnance, Missiles, and Satellite Vehicles

Aleksandrov, S. G. and Federov, R. E.
SOVIET SATELLITES AND SPACE SHIPS 2D. ED.: SELECTED ARTICLES. 23 Feb 62 [272]p. 164 refs. FTD-TT-62-121; AD-273 888.
Order from OTS or SLA $17.50 62-24948

Unedited rough draft trans. of mono. Sovetskie Sputniki i Kosmicheskie Korabli, 2d. ed., Moscow, 1961, p. 24-82, 117-124, 144-147, 182-184, 217-242, 256-394, 427-456.

DESCRIPTORS: *Satellite vehicle research, *Satellite vehicle trajectories, Orbital flight paths, Life expectancy, Spaceflight, *Moon, Mars, Venus, Sun, Spaceships, Deceleration, *Re-entry aerodynamics, *Upper atmosphere, Geophysics, *Ionosphere, Photography, Moon, Van Allen radiation belt, Biology, Controlled atmospheres, *Closed-cycle ecological systems, Dogs, Manned, Pilots, Training, Aviation safety, Global flight.

Contents:
Special features of the motion of satellites
Peculiarities of motion of space vehicles in the solar system; flights to the moon, Mars and Venus; man made planets
Requirements on the accuracy of the motion parameters at the end of the ejection phase
Space rockets and carrier rockets for artificial satellites ejection into orbit
The problem of descent to the surface of the earth and planets
Artificial satellites and the problem of interplanetary flights
Study of interplanetary gas
Biological investigations
Second Soviet cosmic rocket, first flight to the moon
Determining the density of the upper atmosphere by means of the diffusion of sodium vapor
Manometer measurements of density and pressure
Mass-spectrometer measurements of the ion composition of the upper atmosphere
Investigation of the ionosphere
Determination of concentration of positive ions in upper atmosphere
Detection of electrons with an energy of about 10 kev in the upper atmosphere
A study of radiation near the earth and in cosmic space
Studies of interplanetary gas using ion traps
Measurement of magnetic field near earth and moon
Investigation of micrometeors
Biological investigation
First photos of the reverse side of the moon
First flight to Venus
Flight of interplanetary station toward Venus

Soviet cosmic ships-satellites, first Soviet ship-satellite
Second Soviet ship-satellite
Arrangement of ship-satellite
Flight of ship and its return to earth
Medical-biological investigations
Further launchings of ships-satellites in the USSR
Man's first flight into cosmic space

Barrère, M.
SOME ASPECTS OF FUSION ROCKET PROPULSION, tr. by Gretchen Riese. Jan 59, 22p.
Order from OTS or SLA $2.60 AEC-tr-3642

Trans. of l'Age Nucleaire (France) 1958, no. 11, p. 210-215.

DESCRIPTORS: Rockets, *Rocket propulsion, *Nuclear propulsion, Fission, Propellants, Combustion.

Beletskii, V. V. and Zonov, Yu. V.
ROTATION AND ORIENTATION OF THE THIRD SOVIET SATELLITE (Vrashchenie i Orientatsiya Tret'ego Sovetskogo Sputnika) tr. by J. W. Palmer. Jan 62 [32]p. 7 refs. FTD-TT-62-522; RAE Library trans. 984.
Order from OTS or SLA $3.60 62-24477

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 7, p. 32-55.

DESCRIPTORS: *Satellite vehicles, *Rotation, Magnetometers, Manometers, Flight instruments, Motion, Earth, Magnetic fields, Sun, Perturbation theory, Computers, Programming.

The parameters of rotation and orientation of the third Soviet satellite are deduced by making use of a magnetometer sensing arrangement on board the vehicle. The results show that during a period of time the order of the orbital period the rotational motion is approximately that of regular precession, although the precession parameters slowly vary from transit to transit. These slow variations are due to a number of perturbations, the most important of which are aerodynamic and gravitational moments and a turning moment due to the interaction of the satellite's electrical system with the earth's magnetic field. Full details of the method of determining the parameters of rotation and orientation are given. (Author)

Bodner, V. A. and Seleznev, V. P.
THEORY OF THREE-AXIS STABLE SYSTEMS EMPLOYING EXTERNAL INFORMATION. May 62 [7]p. 3 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya: Energetika i Avtomatika, 1960, no. 3, p. 84-95.
Another trans. is available from OTS $1.25 in 60-31850, JPRS-6099, 17 Oct 60, 40p.

DESCRIPTORS: *Inertial navigation, Instrumentation, *Celestial navigation, Navigation, Errors, Gravity, Theory, Acceleration.

[Gol'tsev, V. and Mamleev, D., compilers].
SEVEN HUNDRED THOUSAND KILOMETERS IN OUTER SPACE. 27 Mar 62 [195]p. (12 illus. omitted). FTD-TT-61-384.
Order from OTS or SLA $13.50 62-24266

Unedited rough draft trans. of mono. 700 Tysyach Kilometrov v Kosmose, Moscow, 1961, 191p.

DESCRIPTORS: *Space flight, *Spaceships, Satellite vehicles, Manned, *Astronauts.

Contents:
To the Communist Party and the peoples of the Soviet Union; to the peoples and governments of all nations; to all progressive mankind
To Major German Stepanovich Titov, the Soviet cosmonaut, the first in the world to complete a 25-hour flight in outer space
To all scientists, designers, engineers, technicians, workers, as well as to all collectives and organizations participating in the successful achievement of the latest flight of man in space aboard the satellite spaceship "Vostok-2"; to Comrade G. S. Titov, the Soviet Cosmonaut who made this 25-hour flight
A telephone conversation between N. S. Khrushchev and the Cosmonaut, G. S. Titov
Biography: G. S. Titov
Resolution of the central committee of the CPSU; acceptance of party canidate comrade G. S. Titov into membership in the CPSU
An announcement by cosmonaut G. S. Titov before his flight
The motherland honors a hero
How this unprecedented achievement was accomplished
The rocket climbs, by A. Romanov
At the landing point, by F. Ostroumov
The cosmonaut tells his story, by G. Ostroumov
The cosmos, man, the world, by Nikolai Gribachev
A link between the past and the future, by Oleg Pisarzhevskii
The day of the century, by B. Agapov
A tremendous victory for Soviet science, the pride of mankind, by A. Blagonravov
For the sake of life, by B. Ambartsumyan
Senior scientific coworker, P. V. Simonov; ever forward and higher, by E. A. Asratyan
Crossing the threshold into the universe, by V. Parin
The joy of the nation, the pride of the nation
The day which has delighted the world
The paternal home, by A. Volkov and N. Shtan'ko.
Medical-biological problems of man's flight into cosmic space
Training of cosmonauts
First cosmic flight
Conclusion
Appendices
Bibliography.

Lushnikov, F.
NOTES WRITTEN IN SPACE: THE LOGBOOKS OF YURI GAGARIN AND GHERMAN TITOV. 21 Mar 62 [7]p. FTD-TT-62-345.
Order from OTS or SLA $1.10 62-24339

Unedited rough draft trans. from Krasnaya Zvezda (USSR) 1961, 31 Dec, p. 4.

DESCRIPTORS: *Space flight, *Spaceships, Manned, Satellite vehicles, *Astronauts.

A few comparatively insignificant excerpts from Gagarin's log are presented, with considerable commentary, showing that he was able to perform well under space conditions. Here are the excerpts in their entirety: "9:33 Entered the earth's umbra. Nothing visible through the porthole. 9:42 In the umbra. Feel fine. Listen to "Amur Waves" (popular song). No communications with ground. When the lights are off I find myself in the earth's shadow. A small sickle is visible in the direction of the earth. 9:46 "Waves" is heard. Vesna-2 clearly audible. They don't answer. Pulse 78. 9:50 Withstood g-forces fine during ejection phase. During the first moments of weightlessness I felt as if I were hanging upside down. Pulse 80. Ifeel fine. I'm slightly drowsy 11:28 TASS report. Leviathan. 11:32 "Song of Moscow" (wonderful). "Moscow Nights". 12:42 "Ate" juice. Nothing particular to report. 14:46 Saw the moon twice through porthole No. 2. Nothing particular. The moon is the moon. I ate my meat pie. It didn't taste good. I didn't want any more to eat. 2:45 I slept well. I wanted to stretch my legs or raise them up--this I did."

Parin, V. V.
MAN WILL FLY TO THE STARS. 3 Apr 62 [10]p. FTD-TT-61-257.
Order from OTS or SLA $1.10 62-24914

Unedited rough draft trans. of Zdorov'e (USSR) 1960 [v. 6] no. 11, p. 2-3.

DESCRIPTORS: *Space flight, *Spaceships, Animals, *Satellite vehicles, Astronauts, *Space medicine.

Sarychev, V. A.
EFFECT OF EARTH'S OBLATENESS ON THE ROTATIONAL MOTION OF AN ARTIFICIAL EARTH SATELLITE [Vliyanie Isskustvennogo Sputnika] tr. by Astrid Werner. May 62 [5]p. 4 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of [Iskusstvennye Sputniki Zemli] (USSR) 1961, v. 6, p. 3-10.
Another trans. is available from STS $6.60 as STS Trans-2, 15 Dec 61, 8p.

DESCRIPTORS: *Satellite vehicles, Rotation, *Satellite vehicle trajectories, *Earth, Geophysics, Gravity, Inertia, Numerical analysis, Ellipsoids.

Sourine, G. and Marmain, J.
THE MEN AND THE FORMULAS THAT LAUNCHED SPUTNIK, tr. by B. W. Kuvshinoff. 8 June 60 [14]p. 12 refs. TG 230-T183.
Order from OTS or SLA $1.60 60-21767

Trans. of Aviation Magazine (France) 1957, no. 238, p. 11-14.

DESCRIPTORS: *Space flight, *Satellite vehicles, Lauching.

HYGIENE AND SANITATION, 1962, VOL. 27, NO. 2: SELECTED ARTICLES. 8 May 62 [27]p. 18 refs. JPRS: 13691.
Order from OTS or SLA $2.60 62-24732

Trans. of Gigiena i Sanitariya (USSR) 1962, v. 27, no. 2, p. 19-24, 34-37, 67-71, 100-102.

DESCRIPTORS: *Public health, *Cancer, Etiology, *Exhaust gases, Materials, Iron, *Radiological contamination, *Radioactive isotopes, Radio equipment, *Electromagnetic fields, High frequency.

Contents:
The carcinogenic properties of exhaust gas soot of motor transport, by B. P. Gurinov and others
Hygienic evaluation of construction materials and deactivating agents used for ridding them of contamination with radioactive iron, by M. I. Gneushev and R. S. Kalinova
Sanitary-hygienic requirements of centers and storehouses of radioactive isotopes, by A. V. Terman and I. P. Korenkov
Conditions of super-high frequency electromagnetic field irradiation of those working on the tuning and testing of radio engineering instruments, by Yu. A. Osipov and others.

Brell, I.
DRY FIRE EXTINGUISHING POWDER. Apr 62, 800 words.
Order from TTIS $7.00 TTIS NS 32

Trans. of East German [patent] 22,629, appl. 31 Jan 59, pub. 30 Jan 62.

DESCRIPTORS: *Fire extinguishers, Powders.

Kravchenko, V. S.
RESULTS OF INVESTIGATIONS IN THE FIELD OF EXPLOSION SAFETY (Rezultaty Issledovanii v Oblasti Vzryvobezopasnosti) tr. by L. Meyer. [1962] [23]p. 30 refs. S.M.R.E. Trans. no. 4448; NLL M.3277.
Order from OTS or SLA $2.60 62-24084

Trans. of Russian language article from unidentified source.

DESCRIPTORS: *Explosions, *Safety, Electrical equipment, Statistical analysis, Flame propagation, Theory, Gases, Coal, Mining engineering, Methanes.

Contents:
Statistical law and statistical method for assessing the explosion-safety of electrical equipment
Development of theory and experimental work on the propagation of flames in narrow gaps
The development of theory and experiment in the field of intrinsic safety
Investigation in the field of automatic anti-gas protection
Problems for further investigation.

Nikonova, K. V. and Fukalova, P. P.
HYGIENIC APPRAISAL OF CONDITIONS OF WORK AND THE EFFECTIVENESS OF PROTECTIVE MEASURES DURING INDUCTION HEATING OF METAL WITH THE AID OF HIGH FREQUENCY TUBE GENERATORS. 29 May 62 [13]p. JPRS: 13920.
Order from OTS or SLA $1.60 62-24998

Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1962, v. 6, no. 3, p. 8-13.

DESCRIPTORS: *Metals, *Induction heating, High frequency, Generators, *Electromagnetic shielding, Shielding, *Public health, Labor, Safety, Effectiveness.

The electromagnetic field strength at the majority of work places during hardening and electric soldering comprises 18-50 a/m and 4-18 a/m, and at individual places is as high as 40 a/m and up. The strength of a high-frequency field during melting is greater than in hardening and soldering operations. The CO and hydrocarbons level in the atmosphere of most of the work shops is below the maximally permissible value, except for premises with inadequate air exchange. Air temperature at work places in winter time equals 18-22° (with the outside temperature of 7-10°) reaching in individual areas 30-35° in summer months (with the temperature of outside air being 25-30°). The strength of electromagnetic fields at work places is reduced by a total or blockwise screening of their sources with metal shields. Both methods of screening render good results, the values of the field strength after screening not exceeding permissible standards rates set by provisional sanitary regulations (5-10 v/m). The choice of any particular method of screening is determined by concrete operational conditions. The disposal of gas and heat discharges is realized in a relatively simple fashion by arranging an effective systems general exchange and local exhaust ventilation. (Author)

Tsanev, A., Burnyakov, D., and Karakekhaiov, G.
ATOMIC DEFENSE. June 58 [3]p. AF 1183042.
Available on loan from OTS 59-16956

Trans. (annotation and table of contents) of mono. Protivoatomna Zashtita, Sofia, 1957.

DESCRIPTORS: Abstracting, Indexes, *Civilian defense systems, Instruction manuals, Atoms, *Atomic energy, *Nuclear weapons, Atomic bomb explosions, Radiological contamination, Countermeasures.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Egger, Kurt.
THE CHEMICAL CONSTITUENTS. [1962] 14p.
Order from SLA $1.60 62-16176

Trans. of [German language] mono. The Modern Processing of Cheese, n.p., 1955, chap 3, p. 81-97.

DESCRIPTORS: Food, *Cheese, Processing, Colloids, Preparation.

Golovkin, N. A. and Pershina, L. I.
EFFECT OF SUBFREEZING ON FISH QUALITY AND THE STORAGE LIFE (O Vliyanii Chastichnogo Vymorazhivaniya Vody na Kachestvennoe Sostoyanie Ryby i Sroki Ee Khraneniya) tr. by J. Hardy. [1962] [13]p. (foreign text included) 15 refs. [CSIRO] Trans. 5486.
Order from OTS or SLA $1.60 62-23714

Trans. of Kholodil'naya Tekhnika (USSR) 1961 [v. 38] no. 1, p. 35-38.

DESCRIPTORS: *Frozen food, *Fishes, Preservation, Storage, *Freezing, *Adenosine phosphates, Enzymes.

Laboratory tests showed that subfreezing more than doubles the storage life of the fish. Two experimental deliveries of subfrozen cod (60-80 tons) were made during the summer, under practical conditions: (a) without ice in freight cars with mechanical cooling, and (b) in isothermally controlled refrigerator cars at 0 to -3°. The cod was subfrozen within 5-8 days from the time it was caught. The usual storage time of the fish before being processed was 14-15 days. Some of the fish transported in the refrigerator cars (1.5 tons) was used for the preparation of culinary articles which were awarded a high rating by the Food Tasting Committee. The subfreezing method is recommended for the prolonged storage of fresh fish.

Lomejko, S.
MATURATION OF WINTER WHEAT GRAINS AFTER THE HARVEST (Dozrevanje Zrna Ozime Psenice Posle Zetve) tr. by Dusan Glumac. 1962, 24p. 14 refs. PL-480 Agr.
Order from OTS $0.50 60-21692

Trans. of Arhiv Ministarstva Poljoprivrede (Yugoslavia) 1937, v. 4, no. 7, p. 88-108.

DESCRIPTORS: Cereals, *Wheat, Growth, Seeds, Food, Storage, Precipitation, Temperature, Moisture.

Yugoslav wheat varieties vary greatly in regard to the length of duration of maturation after the harvest, difference amounts to at least 60 days, with all possible transitions between these extreme limits. This character, differently expressed, is found both in the various regions of Yugoslavia and in the limits of each subspecies. Varieties with white grain generally have a considerably higher initial germinability (immediately after the harvest) than varieties with red grain. The course of the maturation process is different for various varieties, whereby 4 main types of this course are more or less clearly distinguished: (1) uniform, gradual maturation; (2) accelerated maturation at the beginning of the process with further slowing-down; (3) accelerated course at the middle with slowing-down at the beginning and at the end, and (4) slowed-down beginning with acceleration at the end. Lower tempera ture during germination increases energy and intensity of germinability of physiologically unripened grain. The effect of dropped temperature in the same sense is noticed not only with wheat but with barley and wild grasses, too. Damage caused by rains in harvest time is the greatest with varieties whose technical and physiological maturity tally with time, and the least is with varieties not germinating soon after the harvest. Damage is greater when parallel with rains the mean daily temperature falls considerably.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

SCOURING AND POLISHING MACHINES WITH HORIZONTAL DRUM, SERIES FS. [1962] 6p. (9 figs. omitted).
Order from SLA $1.10 62-16742

Trans. of German language mono. from Max Spaleck GmbH, Bocholt, Germany, n.d.

DESCRIPTORS: Catalogs, *Machines, *Cleaning, Manufacturing methods.

Manufacturer's catalog.

SCOURING AND POLISHING MACHINES WITH SWIVEL BOLL, SERIES SC. [1962] 4p.
Order from SLA $1.10 62-16741

Trans. of German language mono. from Max Spaleck GmbH, Bocholt, Germany, n.d.

DESCRIPTORS: Catalogs, *Machines, *Cleaning, Manufacturing methods.

Manufacturer's catalog.

Frolov, K. V.
CONTACTLESS STRAIN GAUGE. [1962] [4]p.
C.E. Trans. 2164; NLL M.4777.
Order from OTS or SLA $1.10 62-24242

Trans. of Energomashinostroenie (USSR) 1957, v. 3, no. 12, p. 42.

DESCRIPTORS: *Strain gages, Turbine blades, Vibration, Signals, Transmission, Oscillography, *Radio equipment, Turbines.

Halvorsen, Karl B.
BARKING MACHINE, tr. by J. R.-P. 28 Mar 62, 7p. (5 figs. omitted) 3 refs.
Order from OTS or SLA $1.10 62-23741

Trans. of Norwegian patent 94,094, cl. 38i-1, internat. cl. B27 1, appl. filed 10 July 56, pat. 11 Apr 59, pub. 8 June 59.

DESCRIPTORS: *Machines, Trees, Wood, Plants, *Cutting tools.

A barking machine is described whose barking tool consists of two or four rotating peeling heads fixed on a corresponding number of rotatably mounted gear housings on a rotatable ring-shaped frame. The rotatable housing mounted on the rotatable ring-shaped frame with peeling heads is turned by means of a centrifugal weight which in combination with a linkage arrangement simultaneously causes rotation of an equalizing ring rotatably mounted on the ring-shaped frame.

Noller, E. C.
SELF-LOCKING NUT. [1962] 5p.
Order from ATS $8.00 ATS-43P61F

Trans. of Belgian patent 525,585, appl. filed 8 Jan 54, granted 30 Jan 54.

DESCRIPTORS: *Self-locking nuts, Nuts (Mechanics).

Rodionov, N. S.
SOME RESULTS OF EXPERIMENTAL WORK ON DRILLING BORE HOLES WITH SMALL-DIAMETER BITS. [1962] 4p.
Order from ATS $6.25 ATS-21P61R

Trans. of Razvedka i Okhrana Nedr (USSR) 1958 [v. 24] no. 9, p. 22-25.
Another trans. is available from OTS $0.50 as 59-13280, JPRS(NY)-L-680, 10 Mar 59, 5p.

DESCRIPTORS: *Boreholes, *Drills, Drilling machines, Tests.

Engines and Propulsion Systems

Egerov, V.
NEW STEAM AND GAS TURBINES (Novye Parovye i Gazovye Turbiny) tr. by V. Burdon. 29 May 61 [9]p.
Trafford Park trans. no. 3009; NLL M.3470.
Order from OTS or SLA $1.10 62-24777

Trans. of Nar[odnoe] Khoz[yaistvo] Kazakhstana (USSR) 1960, no. 5, p. 70-73.

DESCRIPTORS: *Steam turbines, *Gas turbines, Design, Construction, Power plants, Turbines.

A brief account is given of the 200 MW steam turbine (type PVK-200-1) and of the 300 MW steam turbine (type 300-240-1); development in the field of gas turbines is also referred to. (Associated Electrical Industries abstract)

Eifir, E. M.
THE TECHNOLOGY OF PRODUCTION OF TURBINE BLADE FORGINGS FROM HEAT-RESISTING ALLOYS WITH A MINIMUM MACHINING ALLOWANCE ON THE AEROFOIL SECTION (Tekhnologiya Izgotovleniya Zagotovok Lopatok Turbiny iz Zharoprochnykh Splavov s Minimal'nym Pripuskom po Peru). Sep 61 [25]p. (foreign text included) 12 refs.
[DSIR NLL] M.3502.
Order from OTS or SLA $2.60 62-23873

Trans. of mono. Obrabotka Zharoprochnykh Splavov [Machining of Fire Resistant Alloys] Akad. Nauk SSSR, 1960, p. 87-97.

DESCRIPTORS: *Airfoils, *Turbine blades, Forging, *Heat resistant alloys, Machining, Production.

Gal'perin, I. I.
NEW HYDRAULIC SCHEMES FOR THE CONTROL OF DISTRICT-HEATING TURBINES (Novye Gidravlicheskie Skhemy Regulirovaniya Teplofikatsionnykh Turbin) tr. by D. R. H. Phillips. 13 Oct 61 [18]p. (foreign text included) 10 refs. Trafford Park trans. no. 2971; NLL M. 3588.
Order from OTS or SLA $1.60 62-24673

Trans. of Teploenergetika (USSR) 1957 [v. 4] no. 4, p. 10-16.

DESCRIPTORS: Heating, *Turbines, *Control systems, *Hydraulic systems, Tests, Relays.

A comparative evaluation is made of the compensation systems and systems with relay characteristic.

Khronin, D. V.
SIMULTANEOUS VIBRATIONS OF SHAFTS, DISCS, AND ROTOR BLADES OF TURBO-COMPRESSORS, AND CRITICAL ROTATIVE SPEEDS CONCERNED. [1962] [11]p. 3 refs. C. E. Trans. 2147; NLL M. 4772.
Order from OTS or SLA $1.60 62-24239

Trans. of Izvestiya Vys[shikh] Uchebnykh Zaved[enii]. Aviats[ionnaya] Tekhn[ika] (USSR) 1958, no. 1, p. 171-178.

DESCRIPTORS: *Turbines, *Compressors, Shafts, Disks, Rotor blades, Vibration, *Compressor rotors, Velocity, Dynamics.

The problem of the interlinked vibration of shafts, discs, and blades of turbocompressor rotors is examined. The solution is based on the use of the conception of dynamic rigidities. This method enables a convenient combination to be made, both in research and in research and in practical calculations, of theoretically obtained results and the data obtained from special experiments. (Author)

Kirakosyants, G. A.
INCREASING THE RAPIDITY OF STEAM TURBINE CONTROL (Povyshenie Bystrodeistviya Regulirovaniya Parovykh Turbin) tr. by D. R. H. Phillips. 16 Oct 61 [8]p. (foreign text included). Trafford Park trans. no. 2973; NLL M. 3590.
Order from OTS or SLA $1.10 62-24776

Trans. of Energetik (USSR) 1957 [v. 5] no. 2, p. 32-34.

DESCRIPTORS: *Steam turbines, Turbines, *Control systems, Operation, *Accelerators, Electromagnets.

A discussion is presented of various methods used to increase the rapidity of the operation of steam turbine control systems, with a description of an electromagnetic accelerator designed for this purpose.

Klyachkin, A. L.
GENERALIZED THERMODYNAMIC FEATURES OF TWO-CIRCUIT JET ENGINES. 28 Mar 62 [13]p. FTD-TT-62-446.
Order from OTS or SLA $1.60 62-24928

Unedited rough draft trans. of Izvestiya Vysshikh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1961, no. 4, p. 94-103.

DESCRIPTORS: *Jet engines, Thrust, *Ramjet propulsion, *Thermodynamics, Mass transfer, Heat transfer, Gas flow, Energy, Circuits, Transformations (Mathematics), Supersonic flight.

We examine the general rules and derive equations that generalize the thermodynamic properties and features of two-circuit jet engines (TCJ's). We also obtain particular solutions for specific types of TCJ's and determine the best spheres of applicability of these engines according to the parameters of thermodynamic efficiency. (Author)

Levit, M. E.
INVESTIGATION OF THE VIBRATION OF TURBOJET MOTORS. [1962] [8]p. C. E. Trans. 2144; NLL M. 4775.
Order from OTS or SLA $1.10 62-24240

Trans. of Izv[estiya] Vys[shikh] Uchebnykh Zaved[enii]. Aviats[ionnaya] Tekhn[ika] (USSR) 1958, no. 1, p. 143-149.

DESCRIPTORS: *Turbojet engines, Engines, Vibration.

An experimental vacuum installation was constructed in which it is possible to investigate the vibrations of full-size turbojet engines at speeds up to and exceeding their normal running speeds, for only a small expenditure of power (20 - 50 kw). The experimental data obtained have made it possible to make an analysis of the influence of various separate factors on engine vibration. Among the most important of these factors are the balancing of the engine rotors, the rigidity of the engine bearings, and the method of attaching the engine to the aircraft. (Author)

Mikhailov, O. N.
CALCULATING THE NATURAL VIBRATION FREQUENCIES OF BUNDLES OF BLADES OF STEAM TURBINES [K Raschetu Chasnot Sobstvennykh Kolebanii Paketov Lopatok Parovyhh Turbin]. 23 Feb 62 [17]p. 5 refs. FTD-TT-61-445.
Order from OTS or SLA $1.60 62-24937

Unedited rough draft trans of Energomashinostrovenie (USSR) 1960 [v. 6] no. 8, p. 22-26.
Another trans. is available from OTS or SLA $1.10 as 61-27300, RTS-1869, July 61 [10]p.

DESCRIPTORS: *Steam turbine blades, *Vibration, Mathematical analysis, Turbine blades.

For abstract see Technical Translations 6: 767, 1961.

Schneider, K. and Löbell, R.
INFLUENCE OF THE PISTON ON CONSTRUCTION AND OPERATION OF INTERNAL COMBUSTION ENGINES. [1962] 11p.
Order from ATS $12.50 ATS-70P50G

Trans. of Metall (West Germany) 1962, v. 16, no. 3, p. 198-204.

DESCRIPTORS: *Internal combustion engines, Construction, Operation, *Pistons.

Tarmann, H.
PRECISION FORGING OF TURBINE BLADES. Feb 62.
Order from BISI £3 BISI-2659

Trans. from Radex-Rund[schau] (Austria) 1961, Aug.

DESCRIPTORS: *Turbine blades, Forging, Precision finishing.

Tret'yakov, P. G. and Levchenko, B. L.
TEMPERATURE TESTS ON THE HIGH-PRESSURE TURBINES OF THE LENINGRAD METAL WORKS (Temperaturnye Ispytaniya Turbin Vysokogo Davleniya LMZ) tr. by D. R. H. Phillips. 15 May 61 [11]p. Trafford Park trans. no. 2940; NLL M. 3354.
Order from OTS or SLA $1.60 62-23941

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 10, p. 22-27.

DESCRIPTORS: *Steam turbines, Turbines, Pressure, Operation, Temperature, Test methods, Metals, Processing.

Urusov, I. D.
THE DESIGN OF MAXIMUM-CAPACITY TURBO-GENERATORS (O Putyakh Sezdaniya Turbogeneratov Predel'noi Moshchnosti) tr. by V. Burdon. 9 May 61 [29]p. (foreign text included) 4 refs. Trafford Park trans. no. 2810; NLL M. 3352.
Order from OTS or SLA $2.60 62-24654

Trans. of Akad[emiya] Nauk SSSR. Otd[elenie] Tekh-[nicheskikh] Nauk. Izv[estiya]: Energ[etika] i Avt-[omatika] 1959, no. 6, p. 22-33.

DESCRIPTORS: *Turbines, *Generators, Design, Liquid cooled, Vibration, Resistance, Cooling.

Consideration is given to the selection of the rotor diameter with liquid cooling in accordance with the main electrical characteristics and the selection of the diameter of the rotor barrel in respect of the mechanical strength; questions of vibration resistance.

Veller, V. N.
THE USE OF ACCELERATORS IN STEAM TURBINE CONTROL SYSTEMS (Primenenie Uskoritelei v Sistemakh Regulirovaniya Parovykh Turbin) tr. by V. Burdon. 17 Nov 61 [17]p. (foreign text included) 7 refs. Trafford Park trans. no. 2972; NLL M. 3589.
Order from OTS or SLA $1.60 62-24672

Trans. of Teploenergetika (USSR) 1957 [v. 4] no. 9, p. 7-12.

DESCRIPTORS: *Steam turbines, Turbines, *Control systems, *Accelerators, Operation.

The advantage of the method put forward in this article for increasing the rapidity of action lies in the fact that a slide valve is used and for this reason the control system is not complicated and the increase in the rapidity of the action can be very considerable. (Associated Electrical Industries abstract)

Zhokhovskii, M. K.
CORRECTIONS OF PISTON PRESSURE GAUGES NECESSITATED BY THE INFLUENCE OF HIGH PRESSURE (Popravki Porshnevykh Manometrov, Vyzyvaemye Vliyaniem) Vysokikh Davlenii. [Paper from Investigations of Piston Pressure Gauges]. Mar 62 [25]p. 8 refs. RTS 1987.
Order from OTS or SLA $2.60 62-24293

Trans. of [Komitet Standartov, Mer i Izmeritel'nykh Priborov]. Trudy Institutov Komiteta (USSR) 1960, v. 46(106) p. 30-42.

DESCRIPTORS: *Pistons, *Pressure gages, Corrections, *High pressure research, Measurement, Instrumentation, Balances, *Engine cylinders.

Manufacturing Equipment and Processes

Dipper, M.
CALCULATION AND STUDY OF IMPACT EXTRUSION OF SHELLS. [1962] 18p. (24 figs. 11 tables 31 formulae refs. omitted).
Available on loan from SLA 62-16948

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1949, v. 20, no. 9/10, p. 275-286.

DESCRIPTORS: *Cylindrical bodies, *Extrusion, Impact shock, Deformation, Plastic flow, Hardening, Statics.

Giovannini, M.
CONCERNING A POSSIBLE DISTRIBUTION LAW FOR THE PRESSURE ON THE IMPRESSION AREA OF PNEUMATIC TIRES. Feb 61, 13p.
Order from K-H $16.25 K-H 10735

Trans. of Ricerche di Ingegneria (Italy) 1937, v. 15, p. 117-121.

DESCRIPTORS: *Tire tubes, Pressure, Distribution theory.

Gulyaev, G. I. and Yurgelenas, V. A.
CHANGE IN MEAN WALL THICKNESS OF TUBES DURING CONTINUOUS UNCORRECTED ROLLING WITHOUT TENSION IN MILLS WITH INDIVIDUAL DRIVES. May 62.
Order from BISI £4 5s BISI-2730

Trans. of #Stal' (USSR) 1961 [v. 21] Sbornik Statei, p. 73-84.

DESCRIPTORS: *Pipes, *Rolling mills, Quality control.

Hedouville, J. de.
THE MODERNIZATION OF THE DOLOMITE SHOP AT HAGONDANGE. May 62.
Order from BISI £2 10s BISI-2706

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1961 [v. 18] no. 7/8, p. 1715-1724.

DESCRIPTORS: *Dolomite, *Manufacturing methods, *Automation, Industrial plants.

Jäkel, W., Neumann, H., and Hofmann, W.
STUDIES OF A PILGER TUBE COLD-ROLLING MILL. Apr 62.
Order from BISI £3 10s BISI-2671

Trans. of Neue Hütte (East Germany) 1961, v. 6 [no. 2] p. 87-91.

DESCRIPTORS: *Rolling mills, *Steel tubing, Manufacturing methods.

Kozubovs'kyi, S. F.
HOT ROLLING SPEED MEASUREMENT AUTOMATION BY THE CORRELATION METHOD. June 62.
Order from BISI £ 4 BISI-2834

Trans. of Avtomatyka (USSR) 1961, no. 3, p. 64-73. Another trans. is available from OTS or SLA $4.60 in 62-15938, JPRS-12485, 14 Feb 62, [46]p.

DESCRIPTORS: *Automotion, *Rolling mills, Correlation techniques, Measurement, *Steel.

Labergere, G.
NEW DEVELOPMENTS IN THE REGENERATION OF USED PICKLING BATHS. May 62.
Order from BISI £3 BISI-2470

Trans. of Métallurgie et la Construction Mécanique (France) 1959, v. 91, July, p. 541-543, 545, 547 and Sep, p. 665-673.

DESCRIPTORS: *Pickling, Pickling compounds, Regeneration, *Crystallization, Metals.

Rapin, P.
ELECTRIC WORKING OF METAL (Travail Électrique des Metaux). [1959] [21]. F-TS-9043.
Order from OTS or SLA $2.60 59-18099

Trans. of Electro Magazine (France) 1956, v. 7, no. 54, p. 26-31.

DESCRIPTORS: Metals, *Electric machinery, Cutting tools, *Electric welding, *Spark machining, Electroerosive machining, *Machine tools.

Yushkin, V. V.
THE EMPLOYMENT OF AN ELECTRIC INTEGRATOR FOR THE STUDY OF THE TEMPERATURE DISTRIBUTION OF THE HEARTH AND FOUNDATION OF A BLAST FURNACE. [1962] [20]p. 4 refs.
Order from OTS or SLA $1.60 62-14549

Trans. of Stal' (USSR) 1957 [v. 17, no. 9] p. 779-787. Another trans. is available from BISI £ 5 10s as BISI-1578 [1960].

DESCRIPTORS: *Blast furnaces, Temperature, *Electronic integrators.

An investigation by means of an electric integrator of the temperature distribution in the hearth and foundation of a blast furnace revealed the substantial advantages of hearths with a carbon layer underneath over other combined designs as well as over all-carbon hearths. (Author)

THE PORT OF RIO DE JANEIRO, tr. by C. B. Smith. 3 Mar 58 [10]p.
Order from OTS or SLA $1.10 59-12017

Trans. from Revista de Engepharia Militar (Brazil) 1957, Sep/Oct.

DESCRIPTORS: *Harbors, *Brazil, History, Management engineering, Commerce, Ships, Cargo, Handling, Transportation, Warehouses.

Schenkel, M.
A DIRECT, ASYNCHRONOUS TRANSDUCER FOR LOW-FREQUENCY RAILROAD NETWORKS. [1962] 9p.
Order from ATS $14.30 ATS-85P58G

Trans. of Elektrische Bahnen (Germany) 1932, v. 8, p. 69-73.

DESCRIPTORS: *Railroads, *Transducers.

Sokolinskaya, I. G.
ON THE ACCURACY OF MAGNETOGRAPHIC INSPECTION OF WELDED JOINTS IN PIPELINES. June 62, 1300 words.
Order from HB $3.90 HB-5625

Trans. of #Zavodskaya Laboratoriya (USSR) 1962, v. 28, no. 4, p. 462-464.

DESCRIPTORS: *Magnetometers, *Welded joints, *Pipes.

MATERIALS

DESIGNATION OF SURFACE FINISH AND MARKINGS TO DEFINE FINISHING OPERATIONS AND HEAT TREATMENT. [1962] [4]p. (20 figs. omitted). [DSIR] NLL M3317.
Order from OTS or SLA $1.10 62-23899

Trans. of [Russian State] Standard GOST 2940-52 (replaces 2940-45) gr. G01, effective 4 Jan 53, reprinted (with changes introduced into the standard) Mar 60.

DESCRIPTORS: *Standards, Drafting, Surfaces, *Finishes, Heat treatment.

Blondiau, L.
CONSIDERATIONS REGARDING THE LE CHATELIER-ANSTETT TEST OF RESISTANCE TO CHEMICAL ATTACK BY CALCIUM SULFATE. [1962] 35p. (1 illus. 1 fig. omitted).
Order from SLA $3.60 62-14230

Trans. of Revue des Materiaux de Construction [et de Travaux Publics. Edition C] (France) 1961, no. 546, p. 189-200.

DESCRIPTORS: *Sea water, *Cements, Decomposition, *Calcium compounds, *Sulfates, Chemical reactions, Test methods, Test

Chudnovskii, A. F.
METHODS OF STUDYING THE THERMAL PROPERTIES OF INSULATORS OF DISPERSED STRUCTURE. [1961] 14p. 2 refs.
Order from OTS or SLA $1.60 AEC-tr-4772

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1946, v. 16, no. 2, p. 231-242.

DESCRIPTORS: *Insulating materials, *Thermal conductivity, Heat tolerance, Test methods, Test equipment, Calorimeters, Cylindrical bodies, Thermal insulations.

This article, on the basis of the steady-state theory, reports a convenient research system of "cylinder-in-cylinder". Together with G. M. Kondrat' yev's λ-calorimeter, the instrument which we have designed permits finding all the basic thermal constants of insulators. (Author)

Syskov, K. I.
MATHEMATICAL ANALYSIS AND DETERMINATION OF THE STRENGTH OF LUMP MATERIAL. June 62.
Order from BISI 4 5s BISI-2398

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1940, no. 2, p. 41-48.

DESCRIPTORS: Mathematical analysis, *Materials.

Ceramics and Refractories

ADVANCES IN GLASS TECHNOLOGY. June 62.
Order from PLP $21.00

Trans. of 47 papers from mono. International Congress on Glass (no. 6) Washington D. C., 8-14 July 62.

DESCRIPTORS: *Glass, Melting, Molding, Diffusion, Physical properties, Mechanical properties, *Manufacturing methods.

Contents:
Process principles during melting and forming Structure
Process principles in continuous melting
Diffusion phenomena
Properties of new glasses
Mechanical properties
Metal-glass interactions during conditioning and forming.

METHOD OF MANUFACTURE OF SMALL GLASS SPHERES. [1962] 2p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-16208

Trans. of Japanese patent 194, 591, appl. 13 Nov 50, pub. 19 Feb 52.

DESCRIPTORS: *Glass, Spheres, Manufacturing methods.

The method consists of heating a mixture of glass and carbon powders at 650°C to 850°C, to melting, for several to several tens of minutes in an isolated atmosphere, and then cooling the mixture.

Bogoroditskii, N. P. and Verbitskaya, T. N.
ON THE BEHAVIOR OF FERROELECTRICS NEAR THE CURIE POINT [Osobennosti Povedeniya Segnetokeramiki Vblizi Tochki Kyuri]. [1962] 3p.
Order from OTS or SLA $1.10 62-10290

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 89 [no. 3] p. 447-[449].
Also available from SLA as RT-8.

DESCRIPTORS: *Ferroelectric materials, Dielectric properties, Aging, Temperature, *Ceramic materials, Ferroelectricity.

Brüche, Ernst and Peter, Klaus.
POLISHING GLASS. VI. SURFACE DEFECTS IN INDUSTRIAL GLASS. 20 Apr 60, 12p. (11 figs. omitted) 7 refs.
Order from SLA $1.60 62-14232

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 2, p. 37-45.

DESCRIPTORS: *Glass, Electrolytic polishing, Surface properties, Grinders, Fracture (Mechanics), Microanalysis, Electron microscopy, Microscopy, Optics.

Hohlbaum, Rudolf and Ott, Walter.
PROCEDURE AND DEVICE FOR THE MANUFACTURE OF FOAM GLASS (Verfahren und Vorrichtung zur Herstellung von Schaumglas). [1962] [20]p. (foreign text included).
Order from OTS or SLA $1.60 62-16164

Trans. of German patent 673796, cl. 32b, gr. 1, F83821 VI/32b, by Fabian and Co., appl. filed 16 Oct 37, granted 9 Mar 39, issued 29 Mar 39 (patent valid for Austria).

DESCRIPTORS: *Expanded glass, Production.

Molten, unrefined glass of a viscosity which corresponds roughly to the one of eggwhite at room temperature, is stirred by aid of a beater device which is very similar to an egg beater and is mixed this way with the furnace atmosphere and/ or is mixed and stirred like this by blowing in gases or air, the temperature of which is at least equal to the one of the glass, so that the glass is loosened up in the shape of a foam. (Author)

Maruyama, Reizo and Kawakubo, Syoitiro.
STUDIES ON CHROMIUM CONTAINING GLASS. [1962] [14]p. (foreign text included).
Order from SLA $1.60 62-14534

Trans. of Yogyo Kyokaishi (Japan) 1951, v. 59, no. 664, p. 482-485.

DESCRIPTORS: *Glass, *Chromium compounds, *Oxides, Density, Thermal expansion, Water, Resistance.

Effects of the addition of chromium oxide on the properties of glass were studied with three kinds of base glass, determining specific gravities, thermal expansions, and chemical durabilities. Maximum amounts of chromium oxide with which clear glass could be obtained were different by different kinds of base glass, being 8.5 weight percent of chromium oxide in a sodalime-silica glass and 5 percent in a soda-silica glass. (Author)

Montagnier, J.
REFRACTORIES FOR THE CHECKERWORK OF OPEN-HEARTH FURNACES. July 62.
Order from BISI £4 BISI-2703

Trans. of Revue de Métallurgie (France) 1961, v. 58 [no. 3] p. 249-256.

DESCRIPTORS: *Open hearth furnaces, *Refractory materials, Aluminates, Silicates, Magnesite, *Chromite.

Ramsauer, Rembert.
APPLICATION OF THE SCHLIEREN MICROSCOPE FOR THE INVESTIGATION OF LAYER STRUCTURES IN PLATE GLASS (Anwendung des Schlierenmikroskopes zur Untersuchung der Schichtung von Tafelglas). Paper read at the Glass Technological Convention (no. 28) Hamburg, 20 May 54. [1962] [31]p. (foreign text included) 8 refs.
Order from SLA $3.60 62-14883

Trans. of Glastechnische Berichte (West Germany) 1954, v. 27, no. 10, p. 374-381.

DESCRIPTORS: *Glass, Microstructure, Microanalysis, Microscopy, *Schlieren photography, Refractive index, Optics.

Sack, W.
THE MANUFACTURE OF CRYSTALLINE OBJECTS BY SINTERING AND DEVITRIFYING POWDERED GLASS WITH THE AID OF MINERALIZERS (Herstellung Kristalliner Körper durch Sinterung und Entglasung von Glaspulver unter Verwendung von Mineralisatoren). [1962] [25]p. (foreign text included) 4 refs.
Order from SLA $2.60 62-14880

Trans. of mono. Beiträge zur Angewandten Glasforschung, Stuttgart, 1959, p. 111-120.

DESCRIPTORS: *Glass, Temperature, Crystallization, Crystals, Surfaces, Sintering, Inorganic substances, Powders, Production.

Within certain temperature ranges all inorganic glasses, and especially silicate glasses tend to crystallize. The crystals so formed are specific for the particular glass composition. In glasses which devitrify less readily, the crystallisation occurs mainly on the surface and it soon ceases. In such cases, therefore, sintered bodies containing a particularly high proportion of crystalline material are obtained from powdered glass after long sintering above the softening point. Additions of suitable inorganic compounds mineralisers cause not only complete devitrification of the vitreous phase during the sintering process but also the formation of new crystal phases by simultaneous diffusion. In this way, sintered bodies are obtained which are mechanically very stable and which have physical and chemical properties different from those of sintered bodies for which only glass powder is used. (Author)

Selacolu, S.
CONCERNING THE INFLUENCE OF THE LIQUID PHASE ON THE PROPERTIES OF MAGNESITE REFRACTORY MATERIALS. July 62.
Order from BISI £3 5s BISI-2845

Trans. of Silikat Technik (East Germany) 1961, v. 12, [no. 1] p. 17-21.

DESCRIPTORS: *Refractory materials, Brick, Spinel, Dolomite, Phase studies, Liquids, *Magnesite.

Strelets, V. M. and Pitak, N. V.
INCREASING THE LIFE OF STOPPERS OF 140-TON CASTING PIT LADLES. Apr 62.
Order from BISI £3 10s BISI-2739

Trans. of Ogneupory (USSR) 1960 [v. 25] no. 4, p. 171-175.

DESCRIPTORS: *Steel castings, *Pipes, Quartz, Clays, Brick, *Refractory materials, *Magnesite.

Trier, Wolfgang.
TEMPERATURE AND STRAIN CONDITIONS IN CRACKING OF GLASS (Temperatur- und Spannungsverhältnisse beim Absprengen von Glas). [1962] [10]p. (foreign text included).
Order from SLA $1.10 62-14498

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1954, v. 27, no. 5, p. 164-166.

DESCRIPTORS: *Glass, *Fracture(Mechanics), Temperature, Cooling.

The nature of the cracking process is explained by simple physical considerations. The observation from practice, that the cracking process is made more difficult with thin wall thicknesses, with poorly cooled glasses and with small tubes, finds its deeper reason thereby. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Bartel, A.
LUBRICATION AND TESTING OF LUBRICANTS AT ELEVATED TEMPERATURES. July 62.
Order from BISI $1 BISI-2862

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1959, v. 101, no. 8, p. 318.

DESCRIPTORS: *Lubrication, *Lubricants, High temperature research, Test equipment.

Evodkimov, V. D.
EFFECT OF A SURFACE-ACTIVE LUBRICANT ON DEFORMATIONS IN RUBBING UNDER CONDITIONS OF SIMPLE AND ALTERNATING FORCE APPLICATION. [1962] 5p.
Order from ATS $7.65 ATS-66P60R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142, no. 2, p. 322-325.

DESCRIPTORS: *Lubricants, Deformation.

Losikov, E. V. and others.
THE USE OF RESIDUAL FUELS IN GAS TURBINES, tr. by Lionel Mote. [1961] [18]p. 14 refs. TRC Trans. no. 1056; [DSIR NLL] M.4680.
Order from OTS or SLA $1.60 62-19133

Trans. of Khimiya i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 8, p. 47-53.

DESCRIPTORS: *Gas turbines, *Fuels, *Fuel oils, Corrosion inhibition, Additives, Combustion chambers, Chemical analysis.

An investigation was made of the effect of vanadium contained in residual fuels, in quantities between 1×10^{-3}% to 4×10^{-3}%, on the intensity of corrosion of gas turbine constructional materials and within a temperature range from 500 to 850°C. Corrosion of all the alloys tested, at temperatures exceeding 650° is accelerated in the presence of vanadium in the fuels in quantities greater than 1×10^{-3}% and is further increased progressively with increasing content. The higher the vanadium content of the fuel, the lower is the temperature at which the characteristic inflexion is observed in the corrosion loss-temperature curve which is characteristic of the initiation of vanadium corrosion. Nickel-based alloys at temperatures above 650° are on the average 10 times less liable to vanadium corrosion than iron-base alloys. Preliminary tests show the possibility of substantial reductions of corrosion of nickel- and iron-base alloys by the introduction, into the fuel, of organic magnesium compounds, soluble in it, as well as by the introduction of ammonia into the combustion chamber. Some suggestions are made on the mechanism of the action of ammonia in the process of reducing vanadium corrosion.

Montegudet, G. and Chantepie D.
NOMOGRAMS FOR CALCULATING PRESSURE LOSSES IN GAS WELLS. [1962] 17p.
Order from ATS $17.90 ATS-24P60F

Trans. of Rev[ue de l'[Inst[itut] Franç[ais du] Pétrole et Ann[ales des] Combustibles Liquides, 1961, v. 16, no. 11, p. 1255-1272.

DESCRIPTORS: *Petroleum, *Sources, Natural gases, *Pressure, Reduction, Determination, *Nomographs.

Nikolaev, A.
RAPID GASIFICATION OF SOLID FUELS OF LOW WEIGHT PER UNIT VOLUME. [1962] 2p.
Order from OTS or SLA $1.10 62-14609

Trans. of Novosti Tekhniki (USSR) 1941, v. 10, no. 8, p. 13-15.

DESCRIPTORS: *Fuels, Gases, Permeability, Combustion chambers, Gas flow, *Wood, *Straw.

Werr, Friedrich.
THE DETERMINATION OF THE GREASE RESISTANCE OF PAPERS. II. COMPARISON OF THE PROCESSES FOR THE DETERMINATION OF GREASE RESISTANCE. [1962] 11p. (2 tables omitted).
Order from SLA $1.60 62-14904

Trans. of das Papier (West Germany) 1961, v. 15, no. 7, p. 318-322.
Another trans. is available from SLA $1.60 as 62-10398, Oct 61, 12p.

DESCRIPTORS: *Paper, Greases, Resistance, Determination.

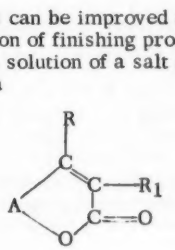
Leather and Textiles

Ackermann, Franz.
FIBER MATERIAL FINISHING PROCESS, tr. by P. C. C. 21 Mar 62, 5p. 4 refs.
Order from OTS or SLA $1.10 62-23735

Trans. of German patent 923,422, cl. 8i, gr. 1, by Ciba AG, Switzerland, patented from 30 Dec 48, grant announced 30 Dec 54, pub. 14 Feb 55 (priority: Switzerland 14 June 46 and 14 Apr 47).

DESCRIPTORS: *Fibers, Colors, Dyes, Processing, Textiles.

Fiber materials can be improved at any desired stage of the preparation of finishing process by a treatment with an aqueous solution of a salt of a compound of general formula



which, when applied to a substrate, colors the material very little or not at all and fluoresces from blue to purple in daylight or in ultraviolet light. In this formula, A is a benzene ring containing two adjacent carbon atoms belonging to an unsaturated lactone ring, R and R_1 representing hydrogen or possibly a substituted alkyl or aralkyl radical, the radical A containing a possibly substituted amino group. Among the salts of the aminocoumarins of the above indicated general formula which can be employed according to the invention, the following are mentioned: 4-methyl-7-dimethylaminocoumarin, 4-methyl-7-diethylaminocoumarin, 4-methyl-7- ethyl-benzyl-aminocoumarin, 4-methyl-7-ethylaminocoumarin, and 3-benzyl-4-methyl-7-ethylaminocoumarin.

Enders, H. and Wiest, H. K.
FLUORCARBON POLYMERS IN TEXTILE HIGH-PURIFICATION. [1962] [53]p. (Figs. omitted) 57 refs.
Order from SLA $5.60 62-10407

Trans. of a German language article from an unidentified source, 1960 (?).

DESCRIPTORS: *Textiles, Purification, *Fluorocarbons, *Polymers, Synthesis, Surface area, Synthetic fibers, Processing.

A series of synthesizing possibilities with fluorcarbon compounds are indicated in a thorough examination. Special requirements for their application in the textile field are discussed in connection with their physical surface area characteristics. The spot-repellent characteristics are proved to be a combination effect due to the multivalent compounds, and the method of operation of fluorcarbon polymers applied in textile treatment; as well as their possibilities, are discussed, In a short summary, the practice of oil- and spot repellent treatment of textiles in the United States is compared with the same stand of the art in Central Europe, and a series of new possibilities of processes and textile effects are examined. (Author)

Hendrix, Hans.
METHODS OF ASCERTAINING CHANGES IN THE INTERNAL STRUCTURE OF SYNTHETIC FIBERS. [1962] 9p. 24 refs.
Order from SLA $1.10 62-16231

Trans. of Zeitschrift fllr die Gesamte Textil-Industrie (West Germany) 1960, v. 62, no. 21, p. 921-924. Another trans. is available from ATS $13.90 as ATS-27N54G [1961] 9p.

DESCRIPTORS: *Synthetic fibers, Microstructure, Fibers, Chemical analysis.

The article describes a number of processes from which it may be concluded that changes have taken place in the internal structure of the fibres. A precise description of the practical side has purposely been omitted, since the article purports to deal only with the principle underlying the methods in question. (Author)

Meckel, L.
THE DETERMINATION OF OPTICAL BRIGHTENERS (Zur Bestimmung Optischer Aufheller) tr. by D. A. Sinclair. 1962, 5p. 7 refs. NRCC Technical trans 1026.
Order from NRCC $0.50 NRCC C-3994

Trans. of Textil-Praxis (West Germany) 1961, v. 16, no. 7, p. 737-738.

DESCRIPTORS: *Fluorescent dyes, Dyes, Determination, Paper chromatography, *Textiles, Processing, Brightness.

Roth, Werner and Schroth, Rudi.
THE SPINNING AND STRETCHING OF POLYCONDENSATE FILAMENTS. III. STRUCTURAL CHANGES IN POLYESTER FILAMENTS CAUSED BY HEAT AND SWELLING AGENTS. [1962] 34p. [39] refs.
Order from SLA $3.60 62-16006

Trans. of Faserforschung und Textiltechnik (Germany) 1961, v. 12, no. 8, p. 361-369.

DESCRIPTORS: *Synthetic fibers, Production, Density, Crystallization, Heat treatment, Microstructure, Liquids, Temperature.

During the action of heat or organic liquids on unstretched and stretched polyester filaments, structural changes take place influencing the density, shrinking, and stress-strain-behaviour. The changes in differently pre-oriented filaments are investigated and related to crystallinity and swelling. (Author)

Photographic Materials

Fomina, I. A. and Bogomolov, K. S.
RECIPROCITY OF TIME AND INTENSITY OF AN ELECTRON BEAM WHEN MK- AND MR-TYPE PHOTOGRAPHIC PLATES ARE EXPOSED. [1962] 2p. 6 refs.
Order from OTS or SLA $1.10 62-10985

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 4, p. 293-294.

DESCRIPTORS: *Electron microscopy, *Electron beams, *Photographic emulsions, Photographic plates.

In as much as the failure of reciprocity law is explained by the total interaction of primary electrons on emulsion grains, these failures must be related to the probability of two and more electrons hitting the same emulsion grains during exposure. A calculation showed that for the fine-grain emulsions of MK- and MR-type plates at ordinary working conditions, the ratio of the probability of electrons hitting a grain twice to the probability of electron hitting the grain once, is so small (approximately 10^{-3}), that actually no accumulative effect of electrons should be considered (the probability of the formation of development center, as a result of one electron hitting the grain, for the MR emulsion is approximately 10^{-1}). An experimental investigation of the relationship between the sensitivity of MK and MR emulsions at a variable intensity of the electron beam and exposure time confirmed the above assumption. (Extracted)

Uspenskii, V. I., Rodionova, N. I., and Chel'tsov, V. S.
THE EFFECT OF SULFITE ON THE ACTIVITY OF COLOR COUPLERS AND THE YIELD OF DYES IN COLOR DEVELOPMENT. [1962] 6p.
Order from ATS $9.75 ATS-13P61R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot-[ografii] i Kinematografii (USSR) 1961, v. 6, no. 5, p. 358-362.

DESCRIPTORS: *Sulfites, *Dyes, Colors, *Photographic chemicals, *Color photography.

Uspenskii, A. N.
RDTsB-1 RECORDING DENSITOMETER FOR COLOR AND BLACK-AND-WHITE PHOTOGRAPHIC PAPERS. [1962] 11p. 2 refs.
Order from OTS or SLA $1.60 62-10978

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 4, p. 255-261.

DESCRIPTORS: *Density pensitive indicators, *Photographic paper, Color photography, Test equipment.

Veprik, Ya. M., Kurnosova, L. V. and others.
EXPERIMENTAL PHOTODEVELOPMENT OF PHOTOEMULSION FILMS ABOARD THE SECOND SOVIET SPACECRAFT. 23 June 62, 9p. 2 refs.
Order from AIS $5.00 AIS-5

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1962, v. 11, p. 35-41.

DESCRIPTORS: *Photographic emulsions, *Photographic film, *Spaceships.

Vifanskii, Yu. K. and Gorokhovskii, Yu. N.
NUMERICAL EVALUATION OF THE SHARPNESS OF A PHOTOGRAPHIC IMAGE. [1962] 3p.
Order from ATS $4.00 ATS-14P61R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot[ografii] i Kinematografii (USSR) 1961, v. 6, no. 5, p. 382-385.

DESCRIPTORS: *Photographs, *Numerical methods and procedures, Mathematical analysis.

Zelikman, V. L.
METHODS FOR HARDENING PHOTOGRAPHIC EMULSIONS: LITERATURE REVIEW. [1962] 14p. 73 refs.
Order from OTS or SLA $1.60 62-10977

Trans. of Uspekhi Nauchnoi Fotografii (USSR) 1960, v. 7, p. 161-169.
Another trans. is available from OTS or SLA $1.60 as 62-14466 [1962] 17p.

DESCRIPTORS: *Photographic emulsions, Hardening, Photographic chemicals, Organic compounds.

Plastics

Cernia, E.
THE PERMEABILITY OF SYNTHETIC RESIN FILMS TO GASES AND VAPORS. [1962] 18p. (4 figs. omitted) 7 refs.
Order from SLA $1.60 62-14305

Trans. of Materie Plastiche (Italy) 1956, v. 22, no. 5, p. 361-367.

DESCRIPTORS: *Plastics, *Films, Thin films, Production, *Permeability, Vapors, Gases, Penetration, Temperature, Pressure, Molecular structure.

A survey indicates that the permeability is dependent on various factors such as temperature, pressure, nature or molecular structure of the resin, and the amount and nature of plasticizer used.

Tatevos'yan, G. O. and Kuznetsova, I. B.
WEATHER RESISTANCE OF FILM MATERIALS. [1962] 13p.
Order from ATS $15.85 ATS-57P61R

Trans. of Plasticheskie Massy (USSR) 1962, no. 3, p. 44-51.

DESCRIPTORS: *Films, *Materials, Plastics, Meteorology, Resistance, *Weatherproofing.

Wood and Paper

Becker, Gunther.
PREREQUISITES FOR QUALITY CONTROL IN WOOD PRESERVATION WORK. [Paper] read at meeting of the Arbeitsgemeinschaft Holzschutz-Guteschutz, Cologne, 17 Nov 60. [1962] 31p. 51 refs.
Order from SLA $3.60 62-14811

Trans. of Special reprint of Holz-Zentralblatt (West Germany) 1960 [v. 86] no. 155, p. 1-12.

DESCRIPTORS: *Wood, Preservation, Quality control.

Linde, F[riedrich].
PROBLEMS IN THE TECHNIQUE OF MEASURING AT THE DRY END OF PAPER MACHINES. June 61, 8p. (2 figs. omitted) 5 refs.
Order from SLA $1.10 61-18571

Trans. of das Papier (West Germany) 1960, v. 14, no. 10, p. 453-457.

DESCRIPTORS: *Paper, Dehydration, Measurement, Machines, Heat transfer, Quality control, Instrumentation.

The thermal problems, such as temperature distribution and heat transfer encountered during the drying of papers by means of steam-heated drying cylinders are investigated, possible methods of measurement are discussed, together with the most suitable installation

points for measuring equipment. It is preferable to check the steam consumption of the individual drying cylinders, as compared with steam pressure measurements, but this method is seldom employed owing to unfavourable conditions at the measuring point and the considerable expenditure necessary. Since the surface temperature of driers can, by means of modern instruments, be more and more accurately measured, this method is proving increasingly popular also for points of continuous measurement. Continuous measurements of basis weight and solids content at the end of the machine are important for quality control. The problems and sources of interference encountered during measurements of basis weight by means of instruments measuring radiation are discussed and critically examined. (Author)

Mamaev, B. M. and Semenova, L. M.
PECULIARITIES OF CUTICULAR STRUCTURES AND CUTICLE FORMATION AMONG XYLOBIONTIC INSECT LARVAE AS ADAPTATIONS TO LIVING IN WOOD (Osobennosti Stroeniya Kutikuly i Kutikulyarnyx Obrazovanii Lichinok Nasekomyx-Ksilobiontov kak Prisposobleniya k Usloviyam Zhizni v Drevesine). Mar 62 [14]p. 12 refs. RTS 2027.
Order from OTS or SLA $1.60 62-24297

Trans. of Zoologicheskii Zhurnal (USSR) 1961, v. 40, no. 3, p. 351-357.

DESCRIPTORS: *Insects, *Morphology, *Histology, Ecology, Tissues (Biology), Wood.

The cuticular adaptations discussed here are mainly those resulting from the necessity to move through wood and to live under various conditions of humidity. The larvae of xylobiontic insects living under similar environmental conditions exhibit the same type of adaptation i.e. they show convergent evolution. For example the method of movement through the wood determines the external body form of the larva and larvae with the same method of progression have similar supporting/fixation structures in the same position. Depending on the humidity of the wood, larvae exhibit adaptations comparable with those of species living in damp soil or dry air. Thus, the cuticle of larvae inhabiting damp wood does not differ much from the cuticle of aquatic or of many soil-inhabiting forms, whereas larvae from dry wood are characterized by the possession of a layer to reduce water loss (epicuticle).

Palenik, K. and Zalewski, J.
SHANGHAI CARBON PAPER MILL. Dec 61, 5p. (3 figs. omitted).
Order from SLA $1.10 62-14483

Trans. of Przeglad Papierniczy (Poland) 1959, v. 15, no. 7, p. 208-210.

DESCRIPTORS: *Paper industry, Manufacturing methods, Industrial equipment, Laboratory equipment, Coatings.

MATHEMATICS

Efimov, S.
MATHEMATICS FOR THE NATIONAL ECONOMY. 22 May 62 [21]p. JPRS: 13832.
Order from OTS or SLA $2.60 62-25017

Trans. of Nauka i Zhizn' (USSR) 1962 [v. 29] no. 2, p. 20-24.

DESCRIPTORS: Mathematics, *Applied mathematics, *Digital computers, Computers, *Economics, *Siberia.

Farkas, Julius.
THEORY OF SIMPLE INEQUALITIES (Theorie der Einfachen Ungleichungen). [1962] [84]p. (foreign text included) 11 refs.
Order from SLA $8.10 62-16022

Trans. of Journal für die Reine und Angewandte Mathematik (Germany) 1901, v. 124 [no. 1] p. 1-27. Also available without foreign text from SLA $5.60 as 62-14286 [1962] [58]p.

DESCRIPTORS: *Inequalities, Theory.

Grishin, A. I., Kavalerov, G. I. and others.
RECENT TRENDS IN SOVIET INSTRUMENT CONSTRUCTION (COMPUTING EQUIPMENT). 5 June 62 [9]p. JPRS: 13990.
Order from OTS or SLA $1.10 62-24974

Trans. of #Priborostroenie (USSR) 1962, no. 1, p. 4-5.

DESCRIPTORS: *Digital computers, Computers, Construction.

Lyakh, R. A.
SOME CHANGES IN THE METHOD OF EXPANDING THE PERTURBATION FUNCTION. 18 Jan 62 [18]p. 4 refs. FTD-TT-61-117; AD-270 767.
Order from OTS or SLA $1.60 62-15832

Unedited rough draft trans. of [Akademiya Nauk SSSR]. Institut Teoreticheskoi Astronomii. Byulleten', 1959, v. 7, no. 6(89) p. 422-432.

DESCRIPTORS: *Perturbation theory, Differential equations, Series, Polynomials, Transformations (Mathematics), Fourier analysis, Operators (Mathematics), Celestial mechanics.

An expansion of the perturbation function is given which is close to Tisserand's expansion, however, it is more convenient for further application. The expansion obtained is applicable at all values of mutual inclination. The coefficient of the terms of the expansion are given for circular motion in powers of α through the fifth. The coefficients of the expansion in powers of the eccentricities are given for terms having the factor $\alpha^{m}e^{n}e'^{n'}$ for values $2m+n+n' \leq 8$. (Author)

Ugodchikov, A. G.
ON TRIGONOMETRIC INTERPOLATION OF CONFORMAL MAPPING FUNCTIONS (O Trigonometricheskoi Interpolyatsii Konformno Otobrazhayushchikh Funktsii). [1962] 5p. 10 refs. H-6331.
Order from OTS $0.50 62-11644

Trans. of Ukrainskii Matematicheskii Zhurnal (USSR) 1959, v. 11, no. 1, p. 111-114.

DESCRIPTORS: *Conformal mapping, *Functions, Trigonometry, Polynomials, Numerical analysis.

Let there be located, the plane $z = x + iy$, the finite single-connected area S which has been limited by the closed smooth Jordan curve L, that is, that curve for which the angle of inclination $\phi(s)$ of it with the tangent to the material axis is a direct function of the length "s" of the arc on L. Let the function $z = \omega(\zeta)$ bring about a conformal transformation of a circle $|\zeta| < 1$ in the area S which is normal such that the point $\zeta = 0$ approaches the point $z = 0$ and the given direction to the point $\zeta = 0$ approaches the given direction to the point $z = 0$. An investigation is made, relatively, of the conditions of the limit during which the sequence of interpolated polynoms $\{\omega_n(\zeta)\}$ converge uniformaly in the closed circle $|\zeta| \leq 1$ for the function $\omega(\zeta)$. It is assumed that $z = \omega_n(\zeta)$ is the interpolated polynome of degree "n", the active portion of which, in the equidistant angles $\zeta = \zeta_j = e^{i\frac{2\pi}{m}j}$, where $J = 1, \ldots, m = 2n$.

MECHANICS

REPORTS OF THE SOCIETY FOR THE STUDY OF RUSSIAN ENGINEERING, 1961, VOL. 2, P. 1-58. 18 Sep 61 [62]p. 13 refs. MCL-1228; AD-265 694.
Order from OTS or SLA $6.60 62-13302

Trans. of unidentified Japanese periodical, pub. by Waseda U.

DESCRIPTORS: *Mechanics, Applied mathematics, *Elasticity, Continuous media, Plasticity, Armor piercing ammunition.

Contents:
Dynamic problems of a "block" on an elastic semiplane, by L. M. Fridman (Prikladnaya Matematika i Mekhanika (USSR) 1959, v. 23 [no. 4] p. 697-705)
Fundamental drawing of sliding curve (work of S. S. Goluskevich)
Irregular motion of a continuous medium, by K. P. Stanyukovich, Moscow, 1955, 804p.: book review by T. Sato
The theory of armor penetration of artillery shells, transport theory, and their similarities (speech of M. A. Lavrent'ev as noted by T. Sato)
Problems in the general theory of plasticity, by A. A. Ilyushin (Prikladnaya Matematika i Mekhanika (USSR) 1960, v. 24, no. 3, p. 399-411).
The sixtieth birthday anniversary of Dr. M. A. Lavrent'ev (Prikladnaya Matematika i Mekhanika (USSR) 1960, v. 24, no. 6).

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 3. [1962] [44]p.
Order from OTS or SLA $4.60 62-25159

Trans. of Soviet titles from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 3.

DESCRIPTORS: Indexes, *Mechanics, Abstracting, Periodicals.

Goldshtik, M. A.
SWIRLING FLOW OF AN INCOMPRESSIBLE FLUID IN A CIRCULAR TUBE. [1961] 13p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-4832

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Tekh-[nicheskikh] Nauk. Izvestiya, 1958, no. 12, p. 24-31.

DESCRIPTORS: *Fluid flow, Liquids, *Axially symmetric flow, Numerical analysis, Fluid mechanics.

An approximate method is presented for investigating axially-symmetric swirl flow based on a linearization of flow equations of an ideal liquid. The method was made for the simplest case of a current in a semi-infinite circular tube. (See also ATS-22L29R or 59-14458)

Novozhilov, V. and Finkel'stein, R.
ON THE ERROR OF THE KIRCHHOFF HYPOTHESIS IN SHELL THEORY (O Pogreshnosti Gipotez Kirkhgofa v Teorii Obolochek). [1962] [31]p. 7 refs.
Order from OTS or SLA $3.60 62-16104

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1943, v. 7, no. 5, p. 331-340.

DESCRIPTORS: *Elastic shells, Theory, Errors, Elasticity, Deformation, Stresses, Transformations (Mathematics), Differential equations, Mechanics.

For the purpose of elucidating the inaccuracies mentioned in the title of this paper the authors develop a theory of shells independent of the Kirchhoff and Love hypothesis. This theory generalizes and extends the earlier treatments published by Basset and partly by Kiltchevsky. The results obtained lead to the conclusion that the general inaccuracy in the theory of shells due to the Kirchoff hypothesis is of the order of t/R in comparison with unity, where t is the thickness of the shell and R is the minor radius of curvature of the middle surface. By virtue of this, the Kirchhoff hypothesis may be applied only to the theory of thin shells. Moreover, among the different theories of shells based on this hypothesis only the variants of E. Treifts are acceptable inasmuch as the latter omits all terms of the order of t/R. (Author)

Zakharin, M. I.
KINEMATIC EQUATIONS OF MOTION OF A COORDINATE TRIHEDRON RELATIVE TO THE EARTH'S SURFACE WITH ITS AXES STABILIZED IN INERTIAL SPACE. 2 Aug 61 [9]p. 1 ref. JPRS: 4832.
Order from OTS or SLA $1.10 61-27953

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 2, p. 144-147.

DESCRIPTORS: *Inertial navigation, *Celestial mechanics, Mechanics, Earth, Gravity, Acceleration, Differential equations, Velocity, Vector analysis.

Aerodynamics and Pneumatics

Anfimov, N. A. and Shevtzov, A. P.
CAPACITIVE METHOD OF MEASURING NONSTATIONARY, SHORT PERIOD, THERMAL FLUXES. May 62 [3]p. 4 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of Akademiya Nauk SSSR. Otd[elenie] Tekh[nicheskikh] Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 4, p. 163-165.

DESCRIPTORS: *Aerodynamic heating, *Hypersonics, *Heat transfer, Thermal insulation, Calorimetery.

Knudsen, Martin.
MOLECULAR FLOW AND EFFUSION OF GASES THROUGH ORIFICES (Die Molekularströmung der Gase durch Offnungen und die Effusion) tr. by K. D. Carlson and E. D. Cater. July 58, 23p. (2 figs. 5 tables omitted).
Order from OTS or SLA $2.60 AEC-tr-3715

Trans. of Ann[alen der] Physik (Germany) 1909, ser. 4, v. 28, p. 999-1016.

DESCRIPTORS: *Gases, *Gas flow, Pressure, Temperature, *Molecules

Regenscheit, Bruno and Jahns, Hans.
JET BLOWER, tr. by F. H. B. 13 Mar 62, 4p. (2 figs. omitted) 5 refs.
Order from OTS or SLA $1.10 62-23736

Trans. of German Auslegeschrift (DAS) 1,020,762, cl. 27 d/1, internat. cl. F 04f, by H. Krant, appl. 16 Apr 56, announced and laid open to inspection 12 Dec 57.

DESCRIPTORS: *Jets, *Blowers, Ducts, Compressors, Fans, Gas flow, Design.

The jet blower is characterized by a spiral casing, surrounding the conveying duct and provided with an annular slot extending over the periphery of the conveying duct, from which slot the mixture of jet and additional air is blown into the conveying duct at an angle uniform with respect to the longitudinal axis of the conveying duct.

Hydrodynamics, Hydraulics, and Hydrostatics

Galyullin, Z. T. and Chernikin, V. I.
THE HYDRAULIC DESIGN OF CEMENT-ASBESTOS GAS PIPE LINES. [1962] 6p.
Order from ATS $7.50 ATS-05P61R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft i Gaz (USSR) 1961, v. 4, no. 11, p. 65-70.

DESCRIPTORS: Cements, Abestos fibers, *Pipes, *Hydraulics, Design, *Gases, Transportation.

Tolstoi, N. A.
ON THE THEORY OF FLOW BIREFRINGENCE (K Teorii Dvoinogo Lucheprelomleniya v Potoke). [1962] [12]p. (foreign text included) 7 refs.
Order from OTS or SLA $1.60 62-16214

Trans. of Akademiya Nauk SSSR. Doklady, 1948, v. 59, no. 9, p. 1563-1566.
Another trans. is available in Dutch from OTS or ETC $1.55 as 61-17954, MTWL-318, 8p.

DESCRIPTORS: *Refractive properties, *Fluid flow, Theory.

METALLURGY

Agafonova, M. I., Baron, V. V., and Savitskii, E. M.
STRUCTURE AND PROPERTIES OF NIOBIUM-TIN ALLOYS. [1961] 7p. 6 refs. MDF A-158.
Order from OTS or SLA $1.10 62-23130

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya]: Met[allurgiya] i Topl[ivo] 1959, no. 5, p. 138-141.
Another trans. is available from OTS or SLA $1.60 as 62-15709, FRI Trans-161, NLL M. 4635 [1961] [12]p.

DESCRIPTORS: *Niobium alloys, *Tin alloys, Alloys, Microstructure, Physical properties, Phase studies, X-ray diffraction analysis, Hardness, Superconductivity, Transition temperature, Thermodynamics.

For abstract see Technical Translations 7: 1054, 1962.

Ballhausen, Carl.
MACHINING OF HARD METAL ALLOYS WITHOUT GRINDING (Bearbeitung von Hartmetallegierungen ohne Schlenen). [1962] [9]p. (foreign text included) 9 refs.
Order from SLA $1.10 62-16051

Trans. of Stahl u[nd] Eisen (West Germany) 1951, v. 71, no. 21, p. 1114-1115.

DESCRIPTORS: *Metals, *Alloys, *Machining, Hardness.

Bennaure, E.
HIGH TOP PRESSURE AND VARIOUS INJECTIONS: EXPERIENCE GAINED ON THE INTERNATIONAL LOW-SHAFT FURNACE AT LIEGE. June 62.
Order from BISI £4 15s BISI-2210

Trans. of Revue de Métallurgie (France) 1961, v. 58 [no. 1] p. 13-24.

DESCRIPTORS: *Blast furnaces, Pressure, Injection, *Manufacturing methods.

Bizouard, H. and Pomey, G.
X-RAY FLUORESCENCE ANALYSIS IN METALLURGY. Mar 62.
Order from BISI £4 15s BISI-2592

Trans. of Mét[aux] (Corros[ion]-Ind[ustries]) (France) 1959, v. 34, July/Aug, p. 302-315.

DESCRIPTORS: *X-ray diffraction analysis, *Fluorescence, Metallurgy.

Brovman, M. Ya.
HEAT TREATMENT OF ROLLER CONVEYOR FRAMES. June 62.
Order from HB $2.00 HB-5389

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 54-56.

DESCRIPTORS: *Heat treatment, *Conveyors, Machines, Distortion.

Delimarskii, Yu. K. and Kolotti, A. A.
ELECTRODE DE RÉFÉRENCE REVERSIBLE EN VERRE - ÉTAIN - SODIUM DANS LES SELS FONDUS, tr. by Vinogradoff. 30 Oct 59 [14]p. 10 refs.
CEA Trans. no. R 765 (text in French).
Order from OTS or SLA $1.60 61-23740

Trans. in French of Ukrain[skii] Khim[icheskii] Zh[urnal] (USSR) 1950, v. 16, p. 438-445.

DESCRIPTORS: *Electrolysis, *Iron, *Foundries, *Electrodes, Glass, Tin, Sodium, Stability, Measurement.

On a étudié les conditions de fabrication d'une électrode reversible de comparaison en verre-sodium-étain pour les sels fondus. On a prouvé la bonne reproductibilité des mesures avec cette électrode. On a confirmé le fait qu'en passant des chlorures aux iodures fondus, le potentiel d'électrode l'argent devient plus négatif. (Author)

Dudouet, M.
SETTING UP A UNIT FOR THE PRODUCTION OF A PARTICULAR CASTING JOB IN A FOUNDRY. July 62.
Order from BISI £3 15s BISI-2837

Trans. of Fonderie (France) 1961, no. 184, p. 171-177.

DESCRIPTORS: *Industrial production, *Castings, *Molding.

Edel'man, F. L., Pokrovskii, V. V. and others.
STABILITY OF ALLOY STEELS IN LIQUID TIN. Apr 62, 600 words.
Order from HB $2.50 HB-5564

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 2, p. 123-124.

DESCRIPTORS: *Steel, *Tin, *Liquid metals, Stability, Industrial plants.

Elzel, J., Lehmannannd, R., and Ölsner, G.
FORMULAE FOR COLOURING METALS. May 62.
Order from BISI £1 5s BISI-2652

Trans. of Forschungsgesellschaft Blechverarbeitung e. V. Mitteilungen (Germany) 1961, no. 17, p. 226-227.

DESCRIPTORS: *Metals, *Colors, *Dyeing.

Feichtinger, H. and others.
ACCURATE DETERMINATION OF GASES IN METALS BY GAS CHROMATOGRAPHY. June 62, 1600 words.
Order from HB $4.30 HB-5653

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1962, v. 28, no. 3, p. 125-126.

DESCRIPTORS: Metals, *Gases, Argon, Carbon compounds, *Gas chromatography, Analysis.

Filyand, M. A. [Romanov, V. A., and Libman, N. B.].
NON-OXIDIZING HEATING OF PRECISION ALLOYS. Apr 62.
Order from HB $2.50 HB-5395

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 5, p. 15-18.

DESCRIPTORS: *Alloys, Nickel alloys, Chromium alloys, *Titanium compounds, *Hydrides, Heat treatment, Springs, *Wrist watches.

Hausen, H.
COMPLETE CALCULATION OF HEAT EXCHANGE IN REGENERATORS. [1959] 31p. 24 refs.
Order from OTS or SLA $3.60 AEC-tr-3850

Trans. of Verein Deutscher Ingenieur Zeitschrift. Beiheft Verfahrenstechnik (Germany) 1942, no. 2, p. 31-34.

DESCRIPTORS: *Heat exchangers, Regeneration, Brick, *Furnaces, Mathematical analysis, Differential equations, Functions, Oscillations, Temperature.

A theory of the heat exchange in regenerators built mainly of brick-work developed earlier is extended so as to allow for rapid temperature changes immediately after reversal and for the difference in the temperature curves at the ends of the regenerator. The equations derived and the diagrams make possible exact calculation of regenerators even under extremely severe conditions and hold good even for the boundary cases of bricks of any thickness. (Author)

Hilbert, H. L.
PUNCHING VS. DRILLING. [1962] 7p. (12 figs. 2 tables [refs.] omitted).
Available on loan from SLA 62-16967

Trans. of [die] Technik (Germany) 1949, v. 4 [no. 8] p. 357-360.

DESCRIPTORS: Metals, Castings, *Sheets, *Machining, *Drilling, Machines, Economics, *Dies.

Hillmann, Hans and Mager, Albrecht.
PRODUCTION OF SINGLE CRYSTALS OF IRON BY THE ZONE-MELTING PROCESS [Erzeugung von Eiseneinkristallen durch das Zonenschmelsverfahren]. [1962].
Order from K-H $7.50 K-H 10963

Trans. of Z[eitschrift für] Metallkunde (West Germany) 1960, v. 51, no. 11, p. 663-666.
Other translations are available from SLA $1.60 as 61-18299 [1961] [16]p and from BISI £3 as BISI-2146 [1961]; partial translations (p. 663-664) are available from SLA $1.60 as 61-20447 [1961] [11]p. and (p. 664-666) from SLA as 62-10319 [1961] [10]p.

DESCRIPTORS: *Iron crystals, Single crystals, Crystals, Production, *Zone melting.

Hirsch, Walter and Fritze, H. W.
ON HOT CRACKING OF AUSTENITIC CHROMIUM-NICKEL-WELDS. [1962] [12]p. 13 refs.
Order from SLA $1.60 62-14188

Trans. of Schweissen und Schneiden (West Germany) 1956, v. 8, no. 3, p. 81-85.
Another trans. is available from BISI £4 as BISI-1633 [1960].

DESCRIPTORS: *Welds, Fatigue.

For abstract see Technical Translations 3: 602, 1960.

Kalpers, H.
CONTACT BI-METALS. [1962] 6p. (1 table omitted).
Available on loan from SLA 62-16960

Trans. of [Metall] (West Germany) 1950, v. 4 [no. 5] p. 193-195.

DESCRIPTORS: *Metals, Economics, Rivets, Silver, Metal coatings, Coatings, Electroplating.

Katz, W.
THE STRUCTURE OF ZINC COATINGS ON THE BASIS OF ELECTROCHEMICAL DISSOLUTIONS. June 62.
Order from BISI £5 BISI-2712

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1954, v. 25 [no. 7/8] p. 307-314.

DESCRIPTORS: *Zinc coatings, *Electrochemistry, Dissociation.

Khokhlov, D. G., Gyrdymov, Yu. A., and Gordon, M. M.
EXPERIENCES WITH AUTOMATIC SPEED CONTROL OF SINTERING MACHINES FOR ENSURING THE COMPLETION OF THE PROCESS. July 58 [15]p. 5 refs. BISI Trans. no. 688; NLL M.4126.
Order from OTS or SLA $1.60 62-24133

Trans. of Stal' (USSR) 1957 [v. 17, no. 6] p. 481-488.

DESCRIPTORS: Machines, *Sintering, Control systems, Automatic.

The method evolved and introduced at the Vysokogorsk sintering plant, of automatically controlling the speed of the sintering machine by using as indicators the differences in the temperature of the escaping gases in the last two windboxes, contributes to an increase in the quality of the sinter, to the efficiency of the machine and also improves the working conditions. (Author)

Kiesel, K. L., Skuin, K. and others.
EXAMINATION OF THE AS-CAST STRUCTURE OF HEAVY FORGING INGOTS. June 62.
Order from BISI £5 15s BISI-2788

Trans. of Neue Hütte (East Germany) 1962, v. 7 [no. 2] p. 111-123.

DESCRIPTORS: *Castings, *Forging, Stresses.

Knüppel, H. and Öters, F.
A CONTRIBUTION TO THE THERMODYNAMICS OF THE DEPHOSPHORISATION REACTION UNDER PHOSPHATE SLAGS CONTAINING LIME. May 62.
Order from BISI £5 15s BISI-2660

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 12] p. 799-808.

DESCRIPTORS: *Phosphates, *Slags, *Calcium compounds, *Oxides, Dephosphorization, Thermodynamics, Chemical reactions.

Kolomytsev, P. T. and Strekopytov, S. A.
USE OF HIGH FREQUENCY CURRENTS TO REVEAL THE STRUCTURE OF ALLOYS. June 62.
Order from HB $3.40 HB-5390

Trans. of #Metallov[adenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. [56]-58.

DESCRIPTORS: *Alloys, Cobalt alloys, Nickel alloys, Chromium alloys, Boron alloys, *High frequency, Electric currents, *Microstructure.

Korol'kov, A. M.
CASTING PROPERTIES OF METALS AND ALLOYS. May 62.
Order from CB $22.50

Trans. of mono. [Liteinye Svoistva Metallov i Splavov, Moscow, 1960, 195p.].

DESCRIPTORS: *Metals, *Alloys, *Casting, Crystallization, Surface tension, Viscosity.

Kusenko, F. G. and Gel'd, P. V.
EQUILIBRIA IN THE Nb - C - O SYSTEM. [1961] 11p. 19 refs.
Order from OTS or SLA $1.60 AEC-tr-4867

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii, Tsvetnaya Metallurgiya (USSR) 1961 [v. 4] no. 2, p. 43-52.

DESCRIPTORS: Metallic compounds, *Niobium compounds, *Oxides, Reduction, Thermodynamics, *Chemical equilibrium, Carbides, *Oxygen, *Carbon, Carbon compounds, Monoxides.

The thermal reduction of Nb_2O_5 by carbon to NbO_2 can take place, from the thermodynamical standpoint, at 1 atm and $T > 1230^oK$. The subsequent conversion of NbO_2 to NbO can be effected at 1 atm and $T > 1650^oK$. The conditions for reduction of NbO to the metal are less favorable than for the processes leading to formation of the carbides. If the charge is designed for production of the metal, from the thermodynamical standpoint the first stage will be production of the highest carbide, which is reduced step-by-step to the lower carbide (or a solid solution) and the metal. The exponents of the last stage of the process largely govern the conditions for realization of thermal reduction by carbon. At 1 atm this process becomes feasible at above 2860^oK, whereas it can be realized at less than 1550^oC in a technical vacuum. Because of the formation of solid solutions of oxygen and carbon in niobium, higher temperatures and lower pressures are required. (Author)

Löscher, H. and Piechaczek, H.
SUPPLEMENTARY HEATING OF ELECTRIC FURNACES WITH OIL-COMPRESSED AIR-OXYGEN BURNERS. June 62, 2600 words.
Order from HB $7.80 HB-5611

Trans. of Neue Hütte (East Germany) 1962, v. 7, no. 1, p. 42-45.

DESCRIPTORS: *Manufacturing methods, *Electric furnaces, Oil burners.

Lugovskoi, V. M.
EFFECT OF OUTER ZONES AND CONTACT FRICTION ON THE DEFORMATION RESISTANCE DURING ROLLING AND FORGING. June 62.
Order from BISI £3 5s BISI-2729

Trans. of #Stal' (USSR) 1961 [v. 21] Sbornik Statei, p. 365-372.

DESCRIPTORS: *Friction, Stresses, *Deformation, Resistance, *Rolling mills, *Forging, Plasticity, Metals.

Mannchen, W. and Schulle, W.
HYDRATION OF SINTERED DOLOMITE IN SUPERHEATED WATER VAPOUR AS AN ACCURATE AND RAPID METHOD ON INVESTIGATION. Apr 62.
Order from BISI £4 BISI-2711

Trans. of Neue Hütte (East Germany) 1961, v. 6, [no. 8] p. 500-506.

DESCRIPTORS: *Dolomite, *Sintering, Water vapor.

Oding, I. A. and Kostochkin, Yu. V.
DEFORMATION AND FAILURE IN THERMAL FATIGUE. June 62.
Order from HB $2.90 HB-5380

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 26-29.

DESCRIPTORS: *Fatigue (Mechanics), Temperature, Deformation, Metals, *Machines.

Papuli, G., Moriconi, N., and Colantoni, W.
PROBLEMS INHERENT IN THE HARDENING AND TEMPERING OF LARGE HIGH GRADE FORGINGS. June 62.
Order from BISI £9 BISI-2517

Trans. of mono. (paper) presented at the Conference on Heavy Forging, Terni, Sep 61.

DESCRIPTORS: Metals, Alloys, *Hardening, *Forging, Density, Thermal expansion, Specific heat, Surface properties, Austenite.

Perlin, I. L.
CONCERNING THE POWER OF THE MILL MOTOR AND THE METAL PRESSURE DURING ROLLING BETWEEN SMOOTH ROLLS. June 62, 8 refs.
Order from PS $7.90 PS CR-4027

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Tsvetnaya Metallurgiya (USSR) 1962, [v. 5] no. 2, p. 124-128.

DESCRIPTORS: *Rolling mills, *Metals, Power, Pressure, Mathematical analysis.

Ponyatovskii, E. G.
MELTING POINT OF LITHIUM AND SODIUM AT PRESSURES UP TO 30,000 kg/cm^2. [1962] 3p. 3 refs.
Order from OTS or SLA $1.10 62-16128

Trans. of #Fiz[ika] Met[allov] i Metal[lovedenie] (USSR) 1961, v. 11, no. 3, p. 476-477.
An unedited rough draft trans. is available from OTS or SLA $1.10 as 61-27828, MCL-1121, 27 July 61 [5]p.

DESCRIPTORS: *Lithium, *Sodium, Melting, Pressure, Metallurgy.

For abstract see Technical Translations 6: 611, 1961.

Rakowski, W. S.
SOME PROBLEMS FROM THE THEORY AND PRACTICE OF SOVIET POWDER METALLURGY (Einige Fragen aus Theorie und Praxis der Sowjetischen Pulvermetallurgie). Presented at the International Conference on Powder Metallurgy, Eisenach, 28-31 May 57. [1962] [21]p. (foreign text included).
Order from SLA $2.60 62-16032

Trans. of Neue Hütte (East Germany) 1957, v. 2, no. 12, p. 764-767.

DESCRIPTORS: *Powder metallurgy, *Metal powders, Sintering, Cermets, Journal bearings.

Savitskii, E. M.
MODERN METAL PHYSICS AND THE PROBLEMS OF MODERN TECHNOLOGY. 28 May 62 [18]p.
JPRS: 13977.
Order from OTS or SLA $1.60 62-24968

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 3, p. 24-34.

DESCRIPTORS: *Metals, *Physics, Metallurgy.

Schürmann, E., Haastert, H. P. and others.
FINAL COMPOSITION OF BATH AND SLAG IN THE BASIC CONVERTER AT DIFFERENT METHODS OF FLUXING THE SECOND SLAG. May 62.
Order from BISI £6 10s BISI-2681

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 24] p. 1581-1592.

DESCRIPTORS: *Slags, Dephosphorization, Desulfurization, Oxygen, Nitrogen.

Schürmann, E. and Büllter, D.
FUNDAMENTAL RELATIONS BETWEEN GAS UTILISATION, CONSUMPTION OF CARBON AND HEAT BALANCE IN THE BLAST FURNACE. June 62.
Order from BISI £5 BISI-2679

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 24] p. 1565-1574.

DESCRIPTORS: *Blast furnaces, Gases, Carbon, Heat, Reduction, Consumption.

Schweizerhof, Sigfrid.
HOMOGENEOUS COOLING STRESSES IN PLATED MATERIALS. [1962] 35p. 4 refs.
Order from SLA $3.60 62-14785

Trans. of Zeitschrift für Metallkunde (West Germany) 1941, v. 33, no. 4, p. 168-175.

DESCRIPTORS: *Magnetic materials, Metals, Sheets, *Plating, Annealing, Temperature, Elasticity, Stresses, *Thermal stresses, Iron alloys, Nickel alloys.

Trömel, Gerhard and Fritze, Hans Werner.
EQUILIBRIA BETWEEN IRON AND LIME-CONTAINING PHOSPHATE SLAGS. [1960] 26p. 18 refs.
Order from SLA $2.60 62-14564

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1959, v. 30, no. 8, p. 461-472 (Max Planck Institut für Eisenforschung (West Germany). [Communication]-822).
Another trans. is available from BISI £7 as BISI-1462 [1960].

DESCRIPTORS: *Iron, Calcium compounds, Oxides, Phosphates, *Slags, Phase studies, crucibles, Temperature, Tests, Oxygen, Phosphorus, Reduction, Melting.

For contents list see Technical Translations 3: 451, 1960.

Zoja, R.
STUDY OF THE REFRACTORY PROPERTIES OF BLAST FURNACE SLAGS BY MEANS OF SPHERICAL SPECIMENS. Apr 62.
Order from BISI £3 15s BISI-2702

Trans. of Revue de Metállurgie (France) 1961, v. 58 [no. 2] p. 131-136.

DESCRIPTORS: *Slags, *Blast furnaces, Metallurgical analysis.

Ferrous Metals

Balalaev, Yu. F.
STRUCTURAL CHANGES AND STRENGTH OF STEEL UNDER HIGH-FREQUENCY CYCLIC LOADING. June 62.
Order from HB $3.00 HB-5383

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 41-45.

DESCRIPTORS: *Steel, *Stresses, *Magnetostrictive, Resonators, Damping, Internal friction.

Baranov, I. A., Oiks, G. N., and Ansheles, I. I.
ON THE EFFECTIVENESS OF VACUUM TREATMENT OF MOLTEN STEEL. June 62, 2700 words.
Order from HB $7.90 HB-5550

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 1, p. 61-69.

DESCRIPTORS: *Steel, Liquid metals, *Degasification, Cast steel, Manufacturing metals.

Beaujard, L., Mondot, J., and Darsch, C.
IMPROVEMENTS IN THE CONTINUOUS ELECTROMAGNETIC DETECTION OF SURFACE SPLINTERS OF HOT-ROLLED SQUARE BILLETS OF MILD BASIC CONVERTER RIMMING STEEL. Feb 62.
Order from BISI £3 10s BISI-2603

Trans. of Rev[ue de] Mét[allurgie]. Mém[oires] Sci[entifiques] (France) 1961, v. 58, May, p. 343-349.

DESCRIPTORS: *Steel, Rolling mills, Surfaces, Impurities, Detection, *Phase detectors.

-Beaulieu, Ch. de, Cagnet, M., and Moreau, J.
RADIOACTIVE TRACER STUDY OF IMPURITY ENRICHMENT DURING OXIDATION OF STEEL. June 62.
Order from BISI £5 15s BISI-2585

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1960, v. 57, no. 11, p. 863-875.

DESCRIPTORS: *Steel, Oxidation, Impurities, Tracer studies.

Beloshabskii, V. I. and Shteiner, A. L.
AUTOMATIC CONTROL OF THE RATE OF INCLINATION OF THE LADLE DURING THE POURING OF PIG IRON. May 62.
Order from MT $6.50 MT Trans-202

Trans. of #Metallurg (USSR) 1961, v. 6, no. 5, p. 10-12.

DESCRIPTORS: *Cast iron, Manufacturing methods, Control, Automatic.

Benteler, H.
DEVELOPMENT OF THE CONTINUOUS CASTING OF STEEL FOR DIRECT HOT ROLLING INTO STRIP. June 60, 5400 words.
Order from HB $14.50 HB-5630

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 10, p. 597-603.

DESCRIPTORS: *Steel, Cast steel, *Manufacturing methods, *Rolling mills, Degassing.

Blanter, M. E.
THERMODYNAMIC-MECHANICAL THEORY OF THE MARTENSITIC TRANSFORMATION. June 62, 67 refs.
Order from HB $3.90 HB-5376

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 4, p. 2-15.

DESCRIPTORS: Metals, *Martensite, Austenite, *Transformations, *Thermodynamics, *Mechanics, Stresses, Metallic crystals, Steel, *Bibliography.

Bogdandy, L. von and Janke, W.
THE SIGNIFICANCE OF PORE DIFFUSION IN THE REDUCTION OF IRON ORES. June 62.
Order from BISI £4 10s BISI-2804

Trans. of Zeitschrift für Elektrochemie (West Germany) 1957, v. 61, no. 9, p. 1146-1153.

DESCRIPTORS: *Iron, *Ores, Porosity, *Gas diffusion.

Bolotskii, V. D. and Khudokormov, D. N.
CERIUM-INOCULATED MALLEABLE IRON. June 62, 500 words.
Order from HB $2.30 HB-5634

Trans. of Liteinoe Proizvodstvo (USSR) 1961, no. 11, p. 22.

DESCRIPTORS: Metals, Iron, *Cast iron, *Cerium, Misch metal, Graphite.

Braumann and Krachter, H.
NITRIDING OF AUSTENITIC CHROME-NICKEL-MOLYBDENUM STEEL TUBES BY NITROGEN DURING AN INTERNAL PRESSURE TEST AT 7000° [1962] 8p.
Order from K-H $10.00 K-H 5342

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1954, v. 25, no. 7/8, p. 373-375.

DESCRIPTORS: *Steel, *Austenite, Chromium alloys, Nickel alloys, Molybdenium alloys, *Nitrides, Pressure, Nitrogen, Hardening.

Brossa, F., Ferro, A., and Venturello, G.
ETCHING FIGURES ON Fe AND Fe-Si ALLOYS FOR THE DETERMINATION OF CRYSTALLOGRAPHIC ORIENTATIONS AND RELATIONS WITH THE STRUCTURE OF THE FERRO-MAGNETIC DOMAINS. July 62.
Order from BISI £4 15s BISI-2351

Trans. of la Metallurgia Italiana, 1959, v. 51, no. 4, p. 139-144.

DESCRIPTORS: *Ferromagnetic materials, *Iron alloys, *Silicon alloys, *Metallic crystals, Mercury compounds, Crystal structure.

Bungardt, K., Müllders, O., and Schmidt, W.
APTITUDE OF THE STATIC TORSION TEST FOR DETERMINING THE TOUGHNESS OF VERY HARD STEELS. II. June 62.
Order from BISI £ 6 BISI-2718

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81 [no. 10] p. 670-675.

DESCRIPTORS: *Steel, *Torson meters, Elasticity, Plasticity, Hardness, Heat treatment.

Cabane, M.
THE ROLLING OF CONTINUOUSLY CAST BILLETS OF SPECIALITY STEELS. [1962] [12]p.
Order from SLA $1.60 62-10742

Trans. of Revue de Métallurgie (France) 1961, v. 58 [no. 8] p. 661-665.

DESCRIPTORS: Steel, Casting, *Cast steel, Rolling mills, *Steel castings, Production.

A major problem created by continuous casting is its adaptation to existing steelplant processing equipment and procedures. There appears to be no basis for objection to the use of continuously cast material in the rolling operations. On the contrary, the use of continuous cast material makes possible the more effective and profitable usage of rough-shaping and surface conditioning operations. The rolling operation is also made easier by the use of continuously cast material. (Author)

Chedaille, J., Etienne, P. and others.
A CONTRIBUTION TO THE STUDY OF METAL FLOW FROM A NOZZLE (INCLUDING APPENDICES I-III). May 62.
Order from BISI £4 15s BISI-2738

Trans. of Revue de Métallurgie (France) 1961, v. 58 [no. 3] p. 257-266.

DESCRIPTORS: *Steel, *Liquid metals, Nozzles, Fluid flow.

Dahl, W., Wildschütz, E., and Langer, J.
GAUGING OF ROLL FORGE AND TORQUE IN HOT-ROLLING AND CALCULATION OF COMPRESSIVE STRENGTH. May 62.
Order from BISI £4 5s BISI-2782

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 4] p. 213-219.

DESCRIPTORS: *Steel, *Manufacturing methods, Forging, *Rolling mills, Torque, Measurement, Deformation.

Danilov, P. M.
FORMATION OF OXIDE INCLUSIONS IN STEEL DEOXIDIZED WITH ALUMINUM. June 62, 2800 words.
Order from HB $7.50 HB-5541

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 12, p. 54-60.

DESCRIPTORS: *Steel, *Aluminum, *Oxides, *Deoxidation, Contamination.

Ende, H. vom and Mahn, G.
PHASE SEPARATION OF SLAGS DURING THE NORMAL CONDUCT OF A BASIC CONVERTER STEEL MELT. June 62.
Order from BISI £3 5s BISI-2799

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 10] p. 641-645.

DESCRIPTORS: *Steel, *Slags, *Manufacturing methods, Phosphates, Dephosphorization.

Fertik, N. A.
EMBRITTLEMENT OF NITRIDED CASE ON (ASTM A355-57T) STEEL 38KhMyuA. Apr 62.
Order from HB $2.75 HB-5325

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 3, p. 13-17.

DESCRIPTORS: *Steel, *Hydrogen embrittlement, Stresses, *Nitrides.

Fremunt, P. and Stransky, K.
LOSS OF ALUMINIUM ON DEOXIDISING PLAIN CARBON STEELS IN THE ARC-FURNACE. May 62.
Order from BISI £6 10s BISI-2665

Trans. of Slevarenstvi (Czechoslovakia) 1961, v. 9, no. 4, p. 126-131.

DESCRIPTORS: *Steel, *Deoxidation, *Aluminum, *Electric furnaces, Castings.

Gonchar, V. N. and Ivantsov, P. F.
CASTING STEEL 35L ALLOYED WITH BORON AND CERIUM JOINTLY. June 62, 3300 words.
Order from HB $8.90 HB-5551

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 1, p. 160-168.

DESCRIPTORS: Alloys, *Steel, Cast steel, *Boron alloys, *Cerium alloys.

Gouyou-Beauchamps, J.
PNEUMATIC TUBES IN STEELWORKS. Apr 62.
Order from BISI £3 10s BISI-2653

Trans. of Revue de Métallurgie (France) 1961, v. 58, no. 10, p. 849-856.

DESCRIPTORS: *Conveyors, *Pneumatic systems, *Steel industry.

Granat, I. Ya.
BASIC FUNCTIONS GOVERNING THE TECHNOLOGY OF THE CONTINUOUS CASTING OF STEEL IN PROCESSES IN WHICH THE NEWLY FORMED BILLET SKIN SLIDES AGAINST THE MOLD. Paper from All-Union Conference on the Continuous Casting of Steel (no. 1) 17-19 Oct 55. [1960] [15]p.
Order from OTS or SLA $1.60 62-14669

Trans. of mono. [Nepreryvnaya Razlivka Stali] (The Continuous Casting of Steel) Moscow, 1956, p. 145-155.

DESCRIPTORS: *Steel, *Casting, *Steel castings, Molding, Liquid metals, Surfaces, Mechanical properties.

Grigoryan, V. A.
KINETICS OF DESULFURIZATION OF LIQUID IRON. June 62, 2800 words.
Order from HB $7.80 HB-5548

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 1, p. 33-40.

DESCRIPTORS: *Iron, *Desulfurization, Slag, Radioactive isotopes, Sulfur.

Gulyaev, A. P. [Korolev, G. G., and Samoilov, V. V.]
HEAT TREATMENT (TEMPERING) OF HIGH-SPEED STEEL TOOLS IN AN ATMOSPHERE OF STEAM [Termicheskaya Obrabotka Instrumentov iz Bystorezhuschei Stali v Atmosfere Para]. June 62, 1800 words.
Order from HB $4.85 HB-4431

Trans. of [Metallovedenie i Termicheskaya Obrabotka Metallov] (USSR) 1958, no. 11, p. 39-44.

DESCRIPTORS: *Steel, *Tools, *Heat treatment, Steam, *Manufacturing methods, Drills.

Henke, G. and others.
GENERAL DISCUSSION OF "DEOXIDATION OF STEEL WITH TECHNICAL CALCIUM-SILICON-ALUMINUM ALLOYS, BY WAHLSTER AND FELDHAUS. June 62, 4300 words.
Order from HB $9.80 HB-5540

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 4, p. 203-206.

DESCRIPTORS: *Steel, *Deoxidation, *Calcium, *Silicon, *Aluminum alloys.

Hoffmann, A.
THE MECHANISM OF THE DECOMPOSITION OF WUSTITE $Fe_{1-x}O$ BELOW 570°C. June 62.
Order from BISI 3 15s BISI-2766

Trans. of Zeitschrift für Elektrochemie (West Germany) 1959, v. 63, no. 2, p. 207-213.

DESCRIPTORS: *Iron, *Wustite, Decomposition.

Hsiao, Chi-mei.
RESEARCH ON AUSTENITIC Cr-Mn-C-N STAINLESS STEELS. July 60 [33]p. 60 refs.
BISI Trans. 1624; [DSIR] NLL M. 6341.
Order from OTS or SLA $3.60 62-25699

Summary trans. including figs. and tables of [Chin Shu Hsüeh Pao] (Chinese People's Republic) 1958, v. 3, no. 2, p. 138-180.
Another summary trans. is available from BISI £12 as BISI-1624 [1960].

DESCRIPTORS: *Stainless steel, Nitrogen, Carbon alloys, Manganese alloys, Chromium alloys, Tests.

Over 200 Cr-Mn-C-N experimental steels have been systematically studied by a combination of microscopic examination, X-ray diffraction, electrolytic extraction, chemical analysis, hardness and magnetic measurements, density and dilatometric methods, oxidation test, tensile tests at both room- and elevated-temperatures, creep-rupture test, etc., and the main findings are presented as follow: (1) stable austenitic region; (2) solid state reactions: martensitic transformation, precipitation reactions, and formation of sigma phase; (3) room- and elevated-temperatures properties, and their relation to the chemical composition of the steels; (4) strengthening effect of interstitial solid solution; (5) effect of precipitation reaction on elevated-temperature strength; (6) effect of V, W, Mo, Nb, B and Si; and tentative recommendation for industrial application. (Author)

Ivanova, V. S.
MECHANISM OF PLASTIC DEFORMATION IN CYCLIC LOADING. June 62.
Order from HB $3.25 HB-5381

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 4, p. 30 and 35-37.

DESCRIPTORS: *Steel, Loading, *Plasticity, *Deformation, Iron, Magnesium alloys, Titanium .

Izbranov, P. D.
THE PROBLEM OF INCREASING THE CUBIC COMPONENT IN THE RECRYSTALLIZATION TEXTURE OF TRANSFORMER STEEL. June 62.
Order from BISI £2 BISI-2828

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1960, no. 4, p. 232-233.

DESCRIPTORS: *Steel, *Crystallization, Crystal structure.

Jäniche, W. and Hye, H. von.
DEVELOPMENT, PRODUCTION AND PROPERTIES OF WEAR-RESISTANT RAILWAY RAILS OF NATURAL HARDNESS. June 62.
Order from BISI £8 BISI-2639

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 19] p. 1253-1263.

DESCRIPTORS: *Railroad tracks, Industrial production, Physical properties, Design.

Kakuevitskii, V. A.
EFFECT OF RESIDUAL STRESSES ON THE HARDNESS OF INDUCTION-HARDENED STEEL 45 (AISI C-1045). June 62.
Order from HB $2.50 HB-5382

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab-[otka] Met[allov] (USSR) 1960, no. 4, p. 38-41.

DESCRIPTORS: *Steel, *Stresses, Deformation, *Hardening, Induction heating.

Koch, W.
ANALYTICAL STUDY OF REACTIONS TAKING PLACE WHEN CALCIUM-CONTAINING DEOXIDIZERS ARE ADDED TO LIQUID STEEL. June 62, 3600 words.
Order from HB $9.60 HB-5425

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 24, p. 1592-1598.

DESCRIPTORS: *Steel, *Deoxidation, *Calcium compounds, Aluminum alloys, Titanium alloys.

Koselev, V. and Burda, S.
EFFECT OF NONMETALLIC INCLUSIONS IN STEEL ON THE FORMATION OF DEFECTS IN FORGINGS AND CASTINGS, PT. II. June 62, 4900 words.
Order from HB $12.50 HB-5224

Trans. of Hutnik (Czechoslovakia) 1961, v. 11, no. 9, p. 429-436.

DESCRIPTORS: *Steel, *Castings, *Forging, Sulfides, Slags, Impurities.

Koster, W. and Haber, J.
DETERMINATION OF THE SOLUBILITY OF CARBON IN IRON TITANIUM ALLOYS BY MEANS OF DAMPING MEASUREMENTS. June 62.
Order from BISI 3 BISI-2805

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 1] p. 23-26.

DESCRIPTORS: *Iron alloys, *Titanium alloys, Carbon, Solubility, Damping.

Köster, W. and Kampschulte, G.
INDICATION OF THE QUALITY CHARACTERISTICS OF LOW CARBON STEELS BY DAMPING MEASUREMENTS. May 62.
Order from BISI £ 9 BISI-2685

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 12] p. 809-822.

DESCRIPTORS: *Steel, Quality control, Damping.

Kramnik, T. A.
SINTERING OF FLUXED KRIVOROZHSKII ORES. May 62.
Order from BISI £ 6 BISI-1870

Trans. of Stal' (USSR) 1958 [v. 18] Blast Furnace Production Suppl. p. 44-59.

DESCRIPTORS: *Ores, Iron, *Sintering.

Kravcenko, Vasil.
ON THE DETERMINATION OF THE TENSILE STRENGTH OF TUBES IN RING TENSILE TESTS. [1959] 14p.
Order from SLA $1.60 62-10497

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1959, v. 30, no. 5, p. 311-314 (Verein Deutscher Eisenhüttenleute (West Germany). [Berichte]-1188).
Another trans. is available from BISI £ 3 as BISI-1389 [1959].

DESCRIPTORS: *Steel tubing, Test methods, Welded joints, Stresses.

For abstract see Technical Translations 2: 657, 1959.

Kron, M., Constant, A. and others.
CONTRIBUTION TO THE STUDY OF THE EFFECT OF NICKEL (UP TO 9%) ON THE MECHANICAL PROPERTIES OF STEELS AT LOW TEMPERATURE. June 62.
Order from BISI £ 6 10s BISI-2690

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1961, v. 58 [no. 12] p. 901-914.

DESCRIPTORS: *Steel, Nickel alloys, Mechanical properties, Temperature.

Küntscher, W., Peters, R. and others.
FURTHER WORK ON THE INJECTION OF POWDERED MATERIALS IN STEELMAKING. June 62, 1400 words.
Order from HB $3.00 HB-5510

Trans. of Neue Hütte (East Germany) 1962, v. 7, no. 1, p. 41-42.

DESCRIPTORS: *Steel, *Manufacturing methods, Powders, *Coal, *Deoxidation, Open hearth furnaces.

Kupzog, K., Hammer, R., and Rellermeyer, H.
INVESTIGATIONS ON THE PROBLEM OF SEGREGATION IN RIMMING STEEL. July 62.
Order from BISI £ 6 10s BISI-2865

Trans. of Stahl [und] Eisen (West Germany) 1962, v. 82 [no. 7] p. 394-401.

DESCRIPTORS: *Steel, Castings, *Sulfur.

Kustanovich, V. S.
SELECTION OF OPTIMUM HEAT TREATMENT FOR PUNCHES OF (Cr-W-Si) STEEL 6KhV2S. June 62.
Order from HB $2.00 HB-5386

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 50-51.

DESCRIPTORS: *Steel, Chromium alloys, Tungsten alloys, Silicon alloys, *Tools, *Heat treatment, Hardening.

Laizner, H.
RIBBED TOR STEEL. June 62.
Order from BISI £ 4 5s BISI-2835

Trans. of Radex-Rundschau (Austria) 1962, Apr, p. 82-88.

DESCRIPTORS: *Steel, Design, Physical properties.

Lihl, F. and Ebel, H.
X-RAY INVESTIGATIONS INTO THE STRUCTURE OF IRON-RICH IRON-SILICON ALLOYS. May 62.
Order from BISI £ 1 15s BISI-2704

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 7] p. 489-491.

DESCRIPTORS: *Iron alloys, *Silicon alloys, *X-Ray diffraction analysis.

Loginov, V. I. and Efimenko, G. G.
SPECIAL FEATURES OF CONTROL OF THE THERMAL CONDITIONS IN THE BLAST FURNACE WITH NATURAL-GAS INJECTION. June 62, 2300 words.
Order from HB $6.60 HB-5565

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 2, p. 31-38.

DESCRIPTORS: *Blast furnaces, Temperature control, *Natural gas, Gases, Injection, Manufacturing methods.

Makhorin, K. E. and Bugaenko, B. P.
THE CHOICE OF FURNACES AND FUEL FOR THE MAGNETIZING ROASTING OF KRIVOI ROG QUARTZITES. Mar 62.
Order from BISI £ 3 10s BISI-2289

Trans. of #Metallurg (USSR) 1960, v. 5 [no. 10] p. 3-7.

DESCRIPTORS: *Rotary furnaces, Shafts, *Fuels, Natural gas, Gases, *Iron, Ores, Reduction.

Meyer, K.
PRESENT STATE OF PELLETIZING OF IRON ORES. June 62, 5900 words.
Order from HB $12.75 HB-5523

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 3, p. 147-154.

DESCRIPTORS: *Iron, *Ores, *Manufacturing methods, Pellets.

Nikolaev, A. N.
CAUSES OF LAMINATION-TYPE CRACKS IN METAL-POWDER COMPACTS. June 62, 900 words.
Order from HB $2.70 HB-5650

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 2, p. 101-103.

DESCRIPTORS: *Powder metals, Fracture (Mechanics), *Dies.

Nizhel'skii, P. E. and Pan'shin, I. F.
BEHAVIOR OF HYDROGEN DURING THE MELTING AND TEEMING OF STEEL. June 62, 2600 words.
Order from HB $7.50 HB-5568

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 2, p. 44-50.

DESCRIPTORS: *Hydrogen, *Steel, Melting, Slags.

Petrova, E. F. [Lapshina, M. I., and Shvartsman, L. A.]
EFFECT OF ALLOYING ON THE THERMODYNAMIC ACTIVITY AND SOLUBILITY OF CARBON IN ALPHA-IRON. June 62.
Order from HB $2.90 HB-5379

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 22-25.

DESCRIPTORS: *Iron, *Alloys, *Carbon, Thermodynamics, Solubility, Activity coefficient.

Popov, A. A. and others.
DIAGRAMS OF DECOMPOSITION OF UNDERCOOLED AUSTENITE IN Cr-W-Si STEELS. June 62.
Order from HB $2.00 HB-5391

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 31-34.

DESCRIPTORS: *Steel, *Austenite, Transformations, Decomposition, Cooling, Chromium alloys, Tungsten alloys, Silicon alloys.

Prishchepa, M. P. [Karpov, V. I., and Kolesnikov, A. F.]
EFFECT OF TEMPERING ON PROPERTIES OF CAST HADFIELD STEEL G13L. June 62.
Order from HB $2.00 HB-5388

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 53-54.

DESCRIPTORS: *Steel, *Manganese alloys, Cast steel, *Heat treatment.

Reihle, M.
A SIMPLE METHOD OF OBTAINING THE FLOW CURVES OF STEEL AT ROOM TEMPERATURE. June 62.
Order from BISI £3 10s BISI-2633

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 5] p. 331-336.

DESCRIPTORS: *Steel, Statistical analysis.

Reiser, W. and Schneider, H.
NEUTRON-ACTIVATION ANALYSIS AND ITS APPLICATION TO STEEL. June 62, 5400 words.
Order from HB $14.50 HB-5409

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1961, v. 32, no. 1, p. 31-38.

DESCRIPTORS: *Steel, Neutrons, *Radioactivation analysis, Magnesium alloys, Copper alloys, Chromium alloys, Cobalt alloys.

Romand, J., Bachet, C., and Berneron, R.
DIRECT DETERMINATION OF SULPHUR, PHOSPHORUS, CARBON, AND SILICON IN STEEL BY MEANS OF EMISSION. May 62.
Order from BISI £7 10s BISI-2602

Trans. of Revue de Métallurgie. Memoires Scientifiques (France) 1961, v. 58 [no. 7] p. 481-495.

DESCRIPTORS: *Steel, *Sulphur, *Phosphorus, *Silicon, Thermionic emission.

Sato, S., Kato, Y., and Kawai, A.
EFFECTS OF WATER-SOLUBLE RUST PREVENTIVES ON MILD STEEL IN AQUEOUS SOLUTIONS. June 62.
Order from BISI £7 10s BISI-2480

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, p. 1013-1017.

DESCRIPTORS: *Steel, *Corrosion inhibition, Solutions.

Schleicher, W., Lutz, H., and Gravenhorst, H.
INFLUENCE OF LIME SULFUR ON THE DESULFURIZATION OF STEEL BATHS. Apr 62, 3400 words.
Order from HB $8.50 HB-5348

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 21, p. 1388-1392.

DESCRIPTORS: *Steel, *Desulfurization, *Calcium compounds, Sulfur.

Schmithals, P. U.
THE REMOVAL OF SCALE IN SHOT BLASTING.
Apr 62, 5000 words.
Order from HB $12.50 HB-5434

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 25, p. 1739-1745.

DESCRIPTORS: *Iron, *Scale, *Abrasion, Blast, Gravimetric analysis.

Schreiber, D. and Mennenöh, S.
CONTRIBUTION TO THE DETERMINATION OF AUSTENITIC GRAIN SIZE BY MEANS OF OXIDATION TESTS. June 62.
Order from BISI £3 10s BISI-2762

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 12] p. 857-861.

DESCRIPTORS: *Steel, *Austenite, *Grains (Metallurgy), Oxidation, Tests.

Shaevich, A. V. and Shubina, S. B.
COMPOSITION OF LIQUID BLAST-FURNACE IRON CHECKED WITHOUT TAKING SAMPLES. June 62, 1300 words.
Order from HB $3.50 HB-5639

Trans. of #Zavodskaya Laboratoriya (USSR) 1962, v. 28, no. 4, p. 447-449.

DESCRIPTORS: *Liquid metals, *Iron, Blast furnaces, Manufacturing methods, *Automation, Spectographic analysis.

Skarek, J. and Ciha, K.
COMPARATIVE INVESTIGATION AND EVALUATION OF DIFFERENT METHODS OF DETERMINING AUSTENITIC GRAIN SIZE. Apr 62.
Order from BISI £5 15s BISI-2589

Trans. of Neue Hütte (East Germany) 1961, v. 6 [no. 5] p. 301-309.

DESCRIPTORS: *Steel, *Grains (Metallurgy), Determination.

Spauszus, S. and Schwarz, C.
DETERMINATION OF ALUMINUM BY (DIRECT) COMPLEXOMETRIC TITRATION. June 62, 1200 words.
Order from HB $3.50 HB-5654

Trans. of Neue Hütte (East Germany) 1962, v. 7, no. 3, p. 180-181.

DESCRIPTORS: *Steel, *Aluminum alloys, *Titration.

Speith, K.-G., Ende, H. vom, and Specht, R.
DEGASSING OF STEEL IN THE LADLE. Apr 62, 5700 words.
Order from HB $14.80 HB-5365

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 22, p. 1449-1456.

DESCRIPTORS: *Steel, Steel industry, Manufacturing methods, *Waste gases, Vacuum apparatus, Liquid metals, *Degasification.

Starodubov, K. F., Babich, V. K., and Gasik, L. I.
VARIATION IN MECHANICAL PROPERTIES OF STEEL WIRE WHILE BEING DRAWN. June 62, 1400 words.
Order from HB $4.20 HB-5133

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 11, p. 155-158.

DESCRIPTORS: Wire, *Steel wire, Mechanical properties, *Drawing (Machine processing).

Svechnikov, V. N. and Shurin, A. K.
THE IRON-HAFNIUM PHASE DIAGRAM. June 62.
Order from BISI £2 15s BISI-2816

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 4, p. 895-898.

DESCRIPTORS: *Iron, *Hafnium, *Phase studies.

Tavolotti, P. and Iaccarine, G.
DIRECTIONALLY CONTROLLED SOLIDIFICATION OF 100-t STEEL CASTINGS. May 62.
Order from BISI £6 BISI-2606

Trans. of International Foundry Congress (no. 28) Vienna, 1961. Kongressvorträge, p. 95-106.

DESCRIPTORS: *Steel castings, *Rolling mills, Cooling.

Testero, G. and Palomba, M.
INFLUENCE OF HEAT TREATMENT AT TEMPERATURES WELL BELOW Ac_1 ON HIGH-CARBON DRAWN STEEL WIRES. May 62.
Order from BISI £2 15s BISI-2748

Trans. of Metallurgia Italiana, 1961 [v. 53, no. 8] p. 474-482.

DESCRIPTORS: *Steel wire, *Heat treatment, Drawing (Machine processing)

Torpanova, G. A.
EFFECT OF ZIRCONIUM ON THE MICROHARDNESS OF FERRITE IN MEDIUM-CARBON STEEL. June 62.
Order from HB $2.75 HB-5378

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 19-22.

DESCRIPTORS: *Steel, *Zirconium, *Ferrites, Hardness, Microstructure, Martensite.

Tylkin, M. A. and Sivak, V. I.
USE OF HIGH-MANGANESE STEEL IN METALLURGICAL EQUIPMENT COMPONENTS. Apr 62.
Order from HB $2.00 HB-5403

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 5, p. 53-54.

DESCRIPTORS: *Steel, Manganese alloys, Industrial equipment, Cast steel, Steel industry.

Vanin, V. S. and Titov, V. K.
CARBURIZING OF STEEL IN LIQUID ORGANIC MEDIA. June 62.
Order from HB $2.25 HB-5387

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 51-53.

DESCRIPTORS: *Steel, *Carbon alloys, *Organic compounds, Benzenes, Toluenes, Ethanols, Gasoline, Kerosene, Ammonia, Glycerols, Anilines.

Wiest, Paul.
STRUCTURE RATING CHARTS AS AN AID IN THE TESTING OF MATERIALS. June 62, 2400 words.
Order from HB $7.80 HB-5506

Trans. of Materialprüfung (West Germany) 1961, v. 3, no. 11, p. 418-422.

DESCRIPTORS: *Steel, Structures, *Machining, *Mechanical properties, Pearlite, Ferrites, Aluminum compounds, Oxides, *Materials.

Willems, J. and Ölsen, O.
ON THE LIFE OF STEEL-MILL MOLDS. June 62, 4100 words.
Order from HB $9.80 HB-5222

Trans. of Giesserei (West Germany) 1961, v. 48, no. 15, p. 425-428.

DESCRIPTORS: *Castings, *Molding, *Life expectancy, Steel industry.

Yakushev, A. M. and Yavoiskii, V. I.
EFFECT OF VANADIUM AND BORON ON THE SOLUBILITY OF HYDROGEN IN LIQUID STEEL. June 62, 2200 words.
Order from HB $5.90 HB-5552

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii] Chern[aya] Met[allurgiya] (USSR) 1962, no. 1, p. 52-56.

DESCRIPTORS: *Steel, Liquid metals, *Vanadium alloys, *Boron alloys, *Hydrogen, Solubility.

Zhetvin, N. P. [Podvoiskii, L. N.] and others.
MAGNETIC AGING OF SOFT STEEL. June 62.
Order from HB $2.50 HB-5377

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 15-19.

DESCRIPTORS: *Steel, *Magnetic cores, Aging, Annealing, Aluminum.

Light Metals

USE OF AN ALUMINUM ALLOY FOR CAST PIECES, SUCH AS WALL FIXTURES AND SIMILAR OBJECTS, tr. by J. R-P. 25 May 62, 8p.
Order from OTS or SLA $1.10 62-25032

Trans. of French patent 877,873, gr. 8, cl. 2, by Vereinigte Aluminiumwerke AG (Germany) appl. filed 6 Aug 41, granted 14 Sep 42, pub. 5 Jan 43.

DESCRIPTORS: *Aluminum alloys, *Castings, Surfaces, Coatings, Corrosion inhibition.

A process is proposed for manufacture of cast pieces provided with an oxide coating obtained by an electrolytic process and serving as decoration, as for example for wall fixtures and similar objects, consisting in the use of an aluminum alloy as starting material. Said alloy contains Mg 1.0 to 2.5%; Si 0.05 to 0.35%; Fe 0.05 to 0.25%; Mn 0.01 to 0.6%; and Ti 0.01 to 0.25%.

Kohler, W.
MEASURES FOR CONTROL OF THERMAL EXPANSION IN LIGHT METALS. [1962] 10p.
Order from ATS $13.25 ATS-71P60G

Trans. of Metall (West Germany) 1962, v. 16, no. 3, p. 204-209.

DESCRIPTORS: *Metals, Thermal expansion, Control.

Nakayama, T.
VIBRATION ELECTROPOLISHING OF ALUMINUM IN PHOSPHORIC ACID SOLUTION. Pt. 3 of Fundamental studies on Vibration Electropolishing. [1962] 15p.
Order from ATS $21.90 ATS-30P61J

Trans. of Keikinzoku (Japan) 1959, v. 9, no. 1(34) p. 53-63.

DESCRIPTORS: *Aluminum, *Electrolytic polishing, Vibration, Phosphoric acids, Solutions.

Nakayama, T.
VIBRATION ELECTROPOLISHING OF ALUMINUM IN PHOSPHORIC ACID SOLUTION. Pt. 4 of Fundamental studies on Vibration Electropolishing. [1962] 7p.
Order from ATS $12.65 ATS-31P61J

Trans. of Keikinzoku (Japan) 1959, v. 9, no. 1(34) p. 64-67.

DESCRIPTORS: *Aluminum, *Electrolytic polishing, Vibration, Phosphoric acids, Solutions.

Nonferrous (except light) Metals

Volkogon, G. M.
EFFECT OF STRAIN RATE ON MECHANICAL PROPERTIES OF NICKEL AT HIGH TEMPERATURES. June 62.
Order from HB $2.50 HB-5384

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 46-47.

DESCRIPTORS: *Nickel alloys, Stresses, *Tensile properties.

Zusmanovich, G. G.
EFFECT OF HEAT TREATMENT ON THE HARDNESS OF NICKEL-PHOSPHORUS COATINGS. June 62.
Order from HB $2.75 HB-5385

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 4, p. 48-50.

DESCRIPTORS: *Nickel alloys, Nickel plating, *Phosphorus alloys, *Heat treatment, *Hardness, Microstructure.

Structural Metallurgy and Corrosion

Berge, Ph. and Jacquet, P. A.
SOME EXAMPLES OF THE USE OF THE POTENTIOSTAT IN INVESTIGATIONS OF THE BEHAVIOR OF METALS IN LIQUID MEDIA. June 62.
Order from BISI £ 3 15s BISI-2774

Trans. of Metallurgy Colloquium on Corrosion of Steel (no. 3) [held at] Saclay, June-July 59. [Proceedings] p. 175-184.

DESCRIPTORS: *Potentiometers, *Electrochemistry, Corrosion, Metals, *Steel, *Aluminum alloys, *Magnesium alloys.

Hache, A.
THE IRSID SEAWATER CORROSION TESTING STATION: PRINCIPLE RESULTS OBTAINED AT BIARRITZ. June 62.
Order from BISI £ 2 5s BISI-2775

Trans. of mono. Metallurgy Colloquium on Corrosion (no. 3) Saclay, 1959. [Proceedings] p. 201-204.

DESCRIPTORS: *Sea water, *Corrosion, Research, Metallurgical laboratories.

Herzog, E.
THE PRESENT STATE OF OUR KNOWLEDGE ON THE CORROSION OF STEELS BY HYDROGEN SULPHIDE. June 62.
Order from BISI £ 7 5s BISI-2776

Trans. of mono. Metallurgy Symposium on Corrosion (no. 3) Amsterdam, 1959. [Proceedings] p. 217-239.

DESCRIPTORS: *Steel, *Corrosion, Corrosive gases, *Hydrogen compounds, *Sulfides, Ions.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

DECLARATION OF THE SOVIET GOVERNMENT. 7 Feb 62 [17]p. FTD-TT-62-452.
Order from OTS or SLA $1.60 62-24916

Unedited rough draft trans from Krasnaya Zvezda (USSR) 1961, 31 Aug.

DESCRIPTORS: *Nuclear weapons, *Nuclear warfare, Hydrogen bombs, Atomic bombs, Thermonuclear reactions, Atomic bomb tests, Control.

The Soviet Union has developed plans for a series of nuclear bombs of increased power, equivalent to twenty, thirty, fifty, and one hundred million tons of TNT. Powerful rockets, similar to those used by Major Yu. A. Gagarin and Major G. S. Titov to complete their incomparable cosmic flights around the earth, can lift and deliver such nuclear bombs to any point on the earth, in case of aggression against the Soviet Union or other socialist countries. It would be unforgivably near-sighted not to draw the appropriate conclusions from the situation which has resulted from the aggressive policy of the military NATO block, and not to strengthen the security and the power of the Soviet state, the great socialist camp of all peace-loving nations. (Extract)

WET PREPARATION OF UO_2 POWDERS. Quarterly rept. no. 1 on Contract (028-60-10RD1). 31 Mar 61, 72p.
Order from OTS or SLA $6.60 EURAEC-55

Trans. of rept. from Comitato Nazionale per l'Energia Nucleare (Italy).

DESCRIPTORS: *Uranium compounds, *Dioxides, *Metal powders, *Powder metallurgy, Solutions, *Precipitation, Particles, *Dehydration, Crystal structure, *Sintering.

A method of preparing UO_2 by the precipitation of solutions of tetravalent uranium is sought.

Avotina, M. P. and Ostromukhova, G. P.
AN INSTALLATION FOR THE ABSOLUTE MEASUREMENT IN ROENTGENS OF X-RADIATION IN THE 20-60 KV RANGE (Ustanovka dlya Absolyutnykh Izmerenii v Rentgenakh Rentenovskogo Izlucheniya ot 20 do 60 Kv). [1962] [12]p. 12 refs.
Order from OTS or SLA $1.60 62-23691

Trans. of Komitet Standartov, Mer i Izmeritel'nykh Priborov, Trudy Institutov Komiteta (USSR) 1961, no. 55(115) p. 35-41.

DESCRIPTORS: *X-rays, Electron tubes, *Dosage, *Dose rate, Measurement, *Ionization chambers.

Campbell, Ian.
ON CERTAIN REACTION MECHANISMS OF HOT ATOMS. June 60, 12p. 19 refs.
Order from OTS or SLA $1.60 AEC-tr-4112

Trans. of Nukleonika (Poland) 1957, v. 2, p. 605-615.

DESCRIPTORS: *Atoms, Chemical bonds, Rupture, Neutron capture, *Radiochemistry.

The mechanism of rupture of chemical bonds by atoms recoiling after neutron capture induced gamma quantum emission is discussed. Equations are given for the total recoil energy, and the fraction of recoil energy available for bond excitation, from single quantum emissions. The case of successive emission of several quanta is also treated. A procedure is given for applying random walk equations, in part hitherto unpublished, to the calculation of the fraction of recoiling atoms which fail to rupture bonds as a result of successive emission of a stipulated number of quanta of defined energies. (Author)

Dontsova, E. I.
ISOTOPIC EXCHANGE OF OXYGEN BETWEEN MINERAL OXIDES AND CO_2 AND THE USE OF ISOTOPIC EXCHANGE FOR DETERMINING THE EXTENT OF THE ACTIVE SURFACE (Izotopnyi Obmen Kisloroda Mineralov-Okisei s CO_2 i Ego Ispol'zovanie dlya Opredeleniya Velichiny Aktivnoi Poverkhnosti). [1962] [11]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 62-14578

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110 [no. 4] p. 589-592.

DESCRIPTORS: *Minerals, *Oxides, *Oxygen, *Carbon dioxide, *Exchange reactions, Radioactive isotopes, Isotopes, Powders, Temperature, Silicon compounds, Aluminum compounds, Manganese compounds, Iron compounds.

Dzhelepov, B. S. and Zhukovskii, N. N.
ISOBARIC NUCLEI WITH THE MASS NUMBER A = 110, tr. by R. F. Kelleher. International Series of Monographs on Nuclear Energy, div. 2, Nuclear Physics Properties of Atomic Nuclei, no. 4. 1962, 120p.
Order from PP $5.00

Trans. of mono. [Izobarnye Yadra s Massovym Chislom A = 110] Academy of Sciences USSR, n. d.

DESCRIPTORS: Nuclear isobars, *Nuclei, *Atomic mass unit, Positrons, Nuclear energy, Radioactive decay, Half life, Quantum mechanics, Excitation, Isotopes, *Palladium, *Silver, *Cadmium, *Indium, *Tin.

Fradkin, E. S.
GREEN'S FUNCTIONS FOR THE INTERACTION BETWEEN NUCLEONS AND MESONS. [1962] 4p. 3 refs.
Order from OTS or SLA $1.10 62-10645

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 98, no. 1, p. 47-50.

DESCRIPTORS: *Nucleons, *Mesons, Nuclear reactions, Particles, *Green's functions, Operators (Mathematics).

A brief derivation is given of the system of functional equations defining the S-matrix of the interaction between nucleons and mesons and the closed solution for the S-matrix. The case of interaction between a nucleon and neutral pseudo-scalar mesons is analyzed by means of pseudo-scalar coupling. (Author)

Gel'man, A. D. and others.
COMPLEX COMPOUNDS OF TRANS-URANIUM ELEMENTS. June 62, 1v.
Order from CB $17.50

Trans. of mono. [Kompleksnye Soedeniya Transuranovykh Elementov, Moscow, 1961, 222p.].

DESCRIPTORS: Complex compounds, *Americium, *Berkelium, *Californium, *Curium, Heavy elements, Radiochemistry, Atomic energy engineering, *Transuranic elements, Uranium, Physical chemistry.

Kurnosova, L. V., Razorenov, L. A., and Fradkin, M. I.
SHORT-LIVED INTENSITY INCREASE OF THE NUCLEAR COMPONENT OF COSMIC RAYS AS A RESULT OF SOLAR ACTIVITY, tr. by A. Werner. May 62 [4]p. 8 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of [Iskusstvennye Sputniki Zemli] (USSR) 1961, v. 6, p. 132-138.

DESCRIPTORS: *Cosmic rays, *Nuclei, *Solar flares, Sun, Radio signals, Radio astronomy, Astronomy.

Muhlenpfordt, J.
THE SIGNIFICANCE OF STABLE ISOTOPES. 9 Mar 61 [15]p. JPRS: 4440.
Order from OTS or SLA $1.60 62-24566

Trans. of Kernenergie (Germany) 1960, v. 3, no. 9, p. 816-821.

DESCRIPTORS: *Isotopes, Stability, *Radioactive isotopes, Labeled substances, Decomposition, Tracer studies, Nuclear energy.

ATOMIC ENERGY, 1961, VOL. 11, NO. 6: SELECTED ARTICLES. 27 Apr 62 [38]p. 20 refs. FTD-TT-62-213.
Order from OTS or SLA $3.60 62-24915

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1961, v. 11, no. 6, p. 498-505 and 515-527

DESCRIPTORS: *Atomic energy engineering, *Fast reactors, Fast neutrons, Thermal neutrons, Research reactors, *Boiling water reactors, Neutron spectrum, Neutron flux density, Neutron cross section.

Contents:
A study of the BR-5 fast reactor, by A. I. Leipunskii and others
Critical thermal flow with boiling water in the channels, by Z. L. Miropol'skii and M. E. Shitsman
The use of resonance indicators in studying neutron spectra in fast-neutron reactors, by V. I. Golubev and others

Aleksandrovich, Yezhi.
ONE YEAR OF WWR-S REACTOR UTILIZATION IN POLAND. 15 Nov 60 [42]p. JPRS: 7043.
Order from OTS or SLA $4.60 61-11508

Trans. of Nukleonika (Poland) 1960, v. 5, no. 1/2, p. 1-21.

DESCRIPTORS: *Atomic energy engineering, *Nuclear power plants, Reactor shielding, Ion exchange, Corrosion inhibition, Control rods, Neutron absorbers, Thermal column, Reactor poisons, Temperature coefficient of reactivity. *Poland.

Described are the changes and supplements introduced into the construction of the reactor and its equipment designed for facilitating the utilization and for broadening the experimental potentialities of the apparatus. In addition there are presented the results of certain measurements pertaining to the physical and technological characteristics of the reactor. (Author)

Celinski, Zdzislaw.
DEVICE FOR MEASURING THE EXCESS REACTIVITY IN A REACTOR. 29 Nov 61 [8]p. JPRS: 11293
Order from OTS or SLA $1.10 62-19683

Trans. of Nukleonika (Poland) 1961, v. 6, no. 4, p. 261-266.

DESCRIPTORS: *Reactor reactivity, Measurement, Instrumentation, Nuclear instruments, Potentiometers, Rods, Design, Operation, Maintenance.

Potentiometers whose characteristics correspond with those of the regulating rods are coupled with the rods by gears. The power fed to each potentiometer is provided from an independent winding ot the transformer. The scale of the indicating instrument gives a reading of the sum of the voltages taken from the potentiometers, which is proportional to the excess reactivity in the reactor. (Author)

Dolleshal', N. A., Aleshchenkov, P. I. and others.
URANIUM GRAPHITE POWER REACTOR WITH DIRECT FEEDING OF STEAM TO TURBINES. 30 Mar 62 [19]p. (5 figs. omitted) 3 refs. FTD-TT-61-342.
Order from OTS or SLA $1.60 62-24469

Unedited rough draft trans. of mono. Uran-Grafitobyi Energeticheskii Reaktor s Pryamony Podachei Para v Turbiny, n. p., 1961, 19p.

DESCRIPTORS: *Power reactors, Graphite moderated reactors, Uranium, Steam, Turbines, *Nuclear power plants, Reactor coolants, Electric power production.

Studies demonstrate that designing a reactor of the above type with a unit electric power ranging 500-800 megawatts is a perfectly feasible project today. The switching over to nuclear superheating of steam as well as to single-loop uniflow circuits is reliably realized in such reactor designs. These reactors, moreover, require no special measure to be taken to protect the population of the neighboring areas from the effects of radiation; hence, the reactor installations can be built near large industrial and residential centers. (Author)

Franzal, R., Henseler, H. and others.
KARL EXPERIMENTAL ATOMIC POWER STATION, REACTOR PRESSURE VESSEL, CONDENSER SUBCOOLER AND TUBING: MATERIALS, WELDING AND NON-DESTRUCTIVE EXAMINATION. May 62.
Order from BISI £5 BISI-2535

Trans. of Atomwirtschaft (West Germany) 1961, v. 6 [no. 1] p. 73-79.

DESCRIPTORS: *Nuclear power plants, Cooling, *Pressure vessels, Pipes, Materials, Welding, Nondestructive testing.

Ricard, J. P.
ATOMIC ENERGY AND NAVAL PROPULSION IN 1958 AND ITS DEVELOPMENT PERSPECTIVES (L'Energie Atomique et la Propulsion Navale en 1958 et ses Perspectives de Developpement). Aug 59 [23]p.
Order from OTS or SLA $2.60 AEC-tr-3739

Trans. of l'Age Nucléaire (France) 1958, no. 11, p. 187-193.

DESCRIPTORS: *Atomic energy, *Submarines, Propulsion, *Nuclear propulsion, Under-water propulsion, *Pressurized water reactors, Naval vessels, Reactor fuels, Economics.

Skvortsov, S. A. and Feinberg, S. M.
USE OF SUPERCRITICAL STEAM PARAMETERS IN PWR (PRESSURIZED WATER-MODERATED WATER-COOLED) REACTORS. 12 Mar 62 [20]p. (2 figs. omitted) 3 refs. FTD-TT-61-341.
Order from OTS or SLA $1.60 62-24932

Unedited rough draft trans. of mono. O Primenenii Sverkhkriticheskikh Parametrov Para v Vodovodyanykh Energeticheskikh Reaktorakh, Moscow, 1961, 18p.

DESCRIPTORS: *Pressurized water reactors, *Reactor coolants, Steam, Reactor fuels, Fuel elements, Fuel cladding, Electric power production, Atomic energy engineering, Nuclear power plants.

The report presents some basic considerations regarding use of water with transcritical parameters in nuclear reactors. A reactor model (body and internal components) is examined, designed to generate electric power of the order of 1000-1400 megawatts. (Author)

Radioactivity

Hermanowicz, W., Sikorowska, C. and others.
RADIOACTIVITY OF EXTERNAL MEDIUM IN THE ENVIRONS OF GREATER WARSAW AND SWIERK.
15 Dec 61 [26]p. JPRS: 11623.
Order from OTS or SLA $2.60 62-19595

Trans. of Gaz, Woda i Technika Sanitarna (Poland) 1961 [v. 35] no. 9, p. 340-347.

DESCRIPTORS: *Radioactivity, Beta particles, Radiological contamination, *Poland, Atmosphere, Water, Water supplies, Soils, Plants, Hydrology, Sewage, Pipes, Contamination, Radioactive waste disposal, Public health.

Investigations were made of beta-activity conducted from April through November 1959, and on the basis of the sanitary state of the external environment, i.e. surface, water, bottom deposits, sewer pipes, soil and vegetation in the environs of Greater Warsaw, conclusions are drawn.

Nefedov, V. B., Popov, V. P., and Yazvitskii, Yu. S.
GAMMA RADIATION IN ELASTIC INTERACTION BETWEEN FAST NEUTRONS AND ATOMIC NUCLEI.
[1961] [20]p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-4718

Trans. of mono. Gamma-Izluchenie pri Neuprugom Vzaimodeistvii Bystrykh Neitronov s Atomnymi Yadrami, Moscow, 1960, p. 1-21.

DESCRIPTORS: *Fast neutrons, *Gamma rays, *Gamma ray spectra, Nuclei, Inelastic scattering, Excitation.

We undertook an investigation of gamma-ray spectra excited by neutrons with energy 14 Mev in lithium, beryllium, carbon, oxygen, magnesium, aluminum, iron, and copper. The spectra were measured with a paired scintillation spectrometer. (Author)

Styro, B. I.
SOME PROBLEMS OF NUCLEAR METEOROLOGY.
5 Apr 62 [20]p. 30 refs. JPRS: 13335.
Order from OTS or SLA $1.60 62-23833

Trans. of #Atomnaya Energiya (USSR) 1961, v. 11, no. 6 [p. 533-538].

An abstract trans. is available from OTS or SLA $1.10 as 62-25154, AID-62-54, 24 Apr 62, 2p.

DESCRIPTORS: *Atmosphere, *Contamination, *Radioactivity, Meteorology, Radioactive isotopes, Natural radioactivity, Nuclear physics.

PHYSICS

JOURNAL OF APPLIED MECHANICS AND TECHNICAL PHYSICS, 1961, NO. 6: SELECTED ARTICLES. 17 Apr 62 [55]p. 36 refs. FTD-TT-62-338.
Order from OTS or SLA $5.60 62-24344

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 6, p. 3-7, 24-35, 54-68.

DESCRIPTORS: Applied mechanics, Physics, *Magnetohydrodynamics, Shock waves, Gas flow, Shock tubes, Supersonic flow, Subsonic flow, *Plasma physics, Velocity, Magnetic fields, Particles, Motion, *Electric arcs, Gases, Voltage, Combustion chambers, *Triangular wings, Hypersonic flow, Boundary layer, Differential equations.

Contents:
Conditions of the evolution of magnetohydrodynamic flows, by R. V. Polovin
Concerning the behavior of certain plasma states with anisotropic distribution of velocities in a magnetic field, by G. M. Zaslavskii and S. S. Moiseev
The operation of a plasmatron having an air-stabilized arc, by G. Yu. Dautov and others
Destruction of the leading edge of a delta wing in a hypersonic flow, by G. A. Tirskii.

Fain, V. M.
ON THE THEORY OF THE COHETRON. [1962] 13p. 13 refs.
Order from OTS or SLA $1.60 62-10641

Trans. of Izv[estiya] Vysshikh Uchebnykh Zavedenii. [Radiofizika] (USSR) 1958, v. 1, no. 5/6, p. 75-82.

DESCRIPTORS: *Electromagnetic waves, *Generators Theory, Microwaves, Spins, Magnetic fields, Radio waves, Ferrites, Particles, Thermodynamics, Excitation, Very high frequency.

Certain theoretical questions connected with the modes of operation of the cohetron (a generator of microradiowaves making use of the spontaneous radiation of spin systems in a magnetic field) are considered. (Author)

[Koch, Bernhard].
VELOCITY MEASUREMENTS USING THE ELECTROMAGNETIC DOPPLER EFFECT, PT. II [Geschwindigkeitsmessung mit Hilfe des Electromagnetischen Doppler-Effektes, teil 2]. [1962].
Order from K-H $16.25 K-H 10797-b

Trans. of Archiv für Technisches Messen [und Industrielle Messtechnik] (West Germany) 1960 [v. 295] suppl. V 143-5 [p. 153-156].
Another trans. is available from SLA $3.60 in 61-20445 [1961] [35]p.

DESCRIPTORS: Electromagnetic waves, Frequency, Velocity, Measurement, *Doppler systems, Wave transmission.

Kogan, M. N.
SHOCK WAVES IN MAGNETOHYDRODYNAMICS. May 62 [3]p. 4 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of Akademiya Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 3, p. 143-146.

DESCRIPTORS: *Magnetohydrodynamics, *Shock waves, Stability, Hydrodynamics.

Mirsoeva, L. M.
DETERMINATION OF THE SOLID PHASE CONCENTRATION IN A TWO-PHASE MEDIUM WHEN IT IS IN UPWARD MOTION IN A VERTICAL TUBE. [1962] 8p.
Order from ATS $11.00 ATS-38N50R

Trans. of Akad[emiya] Nauk Azerbaidzhan[skoi] SSR, Baku. Izvest[iya] 1957 [v. 14] no. 9, p. 11-19.

DESCRIPTORS: *Phase studies, Solids.

Novikov, I. I.
CALCULATION OF THE OUTFLOW OF SATURATED AND MOIST STEAM FROM NOZZLES, tr. by J. K. Skwirzynski. Nov 61 [10]p. 3 refs. NLL M. 3538.
Order from OTS or SLA $1.10 62-24630

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 6, p. 9-11.

DESCRIPTORS: *Supersonic nozzles, Nozzles, *Steam, Moisture, *Gas flow, Mathematical analysis, *Sound, Propagation.

One of the methods of mathematical formulation of the process of outflow of saturated and moist steam is described. (Author)

Pshenai-Severin, S. V.
ON THE MUTUAL APPROACH OF AEROSOL PARTICLES IN A SOUND FIELD DUE TO OSEEN'S HYDRODYNAMIC FORCES (O Sblizhenii Aerozol'nykh Chastits v Zvukovom Pole pod Deistviem Gidrodinamicheskikh Sil Oseena) tr. by V. Burdon. 21 Sep 61 [10]p. (foreign text included) 10 refs. Trafford Park trans. no. 2819; NLL M. 3582.
Order from OTS or SLA $1.10 62-32045

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1959, v. 125, no. 4, p. 775-778.

DESCRIPTORS: *Aerosols, Particles, *Acoustics, Sound, Coagulation, *Hydrodynamics, Low frequency, Frequency.

The effect of Oseen's hydrodynamic forces and of the process of orthokinetic coagulation on the mutual approach of particles in a sound field with a comparatively low frequency is analyzed.

Szablewski, W.
THEORY OF TURBULENT FLOW OF GASES WITH EXTREMELY VARIABLE DENSITY (Zur Theorie der Turbulenten Strömung von Gasen Stark Veränderlicher Dichte) tr. by Hugo Gabriel. [1962] [15]p. (foreign text included) 8 refs.
Order from SLA $1.60 62-16111

Trans. of Ingenieur-Archiv (Germany) 1952, v. 20, no. 2, p. 67-72.

DESCRIPTORS: *Gases, Gas flow, Turbulence, *Turbulent flow, Density, Jet mixing flow, Statistical processes, Partial differential equations, Theory.

The statistical approach after O. Reynolds is generalized to apply also to fields with extremely variable density. On the basis of Prandtl's concept of the mixing path a system of equation is then established for the computation of the mixing processes. (Author)

Szablewski, W.
TURBULENT MIXING BETWEEN PLANE AIR-JETS WITH NEARLY EQUAL VELOCITIES AND LARGE DIFFERENCES IN TEMPERATURE (Turbulente Vermischung Zweier Ebener Luftstrahle von Fast Gleicher Geschwindigkeit und Stark Unterschiedlicher Temperatur). [1962] [22]p. (foreign text included).
Order from SLA $2.60 62-16165

Trans. of Ingenieur-Archiv (Germany) 1952, v. 20 [no. 2] p. 73-80.

DESCRIPTORS: Gases, *Gas flow, Jets, *Jet mixing flow, Turbulence, *Turbulent flow, Velocity, Temperature.

The fields of velocity and temperature which are created by turbulent mixing between plane air-jets with nearly equal velocities and a large temperature difference are calculated. The characteristic effect observed is a temperature-difference dependent on rotation of the boundaries of the mixing zone toward the hotter jet. (Author)

Varvarov, Nikolai.
A COSMIC NECKLACE FOR OUR PLANET. 3 May 62 [17]p. JPRS: 13635.
Order from OTS or SLA $1.60 62-24385

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 7[28] p. 32-33.

DESCRIPTORS: *Solar energy, *Solar batteries, Thermoelectric generators, Thermoelectricity.

A practically everlasting flow of solar radiation energy is an enormous reserve for the energetics balance of our Fatherland. Its widespread exploitation in the national economy will make it possible to reduce considerably the dissipation of coal, oil, natural gas, and other mineral raw materials sources now being expended in order to procure electrical power. (Extracted)

Yantovskii, E. I.
THE EQUATIONS OF A MAGNETOHYDRODYNAMIC ALTERNATING-CURRENT GENERATOR HAVING A ROTATING MAGNETIC FIELD. 16 Feb 62 [22]p. 14 refs. FTD-TT-62-90; AD-273 885.
Order from OTS or SLA $2.60 62-24936

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya. Energetika i Avtomatika (USSR) 1961, no. 6, p. 142-151.

DESCRIPTORS: *Magnetohydrodynamics, Alternating current, *Generators, Electromagnetic fields, Rotation, *Electrical equipment, Electric motors, Turbines, *Gas turbine rotors, Hydrodynamics, Equations, Motion, Partial differential equations.

Electricity and Magnetism

Dekhtyar, M. V. and Kazantseva, N. M.
STRUCTURAL CHANGES AND ANOMALOUS TEMPERATURE DEPENDENCE OF THE MAGNETIC PROPERTIES OF AN Ni-Fe (50% Ni) ALLOY. [1960] 5p. 12 refs. MDFD-134.
Order from OTS $0.50 62-11182

Trans. of #Fiz[ika] Met[allov] i Metall[ovedenie] (USSR) 1959, v. 8, no. 3, p. 412-416.

DESCRIPTORS: *Iron alloys, *Nickel alloys, Magnetic properties.

The temperature dependence of the magnetic properties of an Ni-Fe (50% Ni) alloy has been studied. It is shown that it has a different form depending on the structure acquired by the alloy after heat treatment. An anomalous temperature behavior of the saturation magnetization, maximum susceptibility and coercive force is detected in an alloy hardened from 1200° during heating in the 300 to 360° range. It is caused by the process of forming short-range order, which occurs during the heating of a disordered-rapidly cooled alloy. Consequently, the anomalous properties acquired by the hardened alloy to 300 to 360° are retained even after cooling to room temperature. The anomalous temperature behavior of the magnetic properties is not observed in the temperature range mentioned in samples subjected to ordering annealing. (Author)

Forrer, R[obert] and Baffie, R[aymond].
THERMAL VARIATION OF THE HYSTERESIS CYCLE OF SOME FERRO-MAGNETIC MATERIALS. I. PHENOMENA IN THE VICINITY OF THE CURIE POINT. [1962] 14p. (27 figs. refs. omitted).
Available on loan from SLA 62-16985

Trans. of Journal de Physique et le Radium (France) 1944 [ser. 8] v. 5, no. 6, p. 97-108.
Another trans. is available from SLA mi$2.70, ph$4.80 as 60-10827 [1960] [29]p.

DESCRIPTORS: *Ferromagnetic materials, Materials, *Hysteresis, Temperature, Ferromagnetism.

Frait, Z.
ON THE QUESTION OF THE INHOMOGENEITY OF DEMAGNETIZING FIELDS IN FERROMAGNETIC RESONANCE. 17 Mar 59, 9p. 12 refs. LL-TF-13.
Order from OTS or SLA $1.10 59-14902

Trans. of [Chekhoslovatskii Fizicheskii Zhurnal] 1958, v. 8, no. 1, p. 113-118.

DESCRIPTORS: Electromagnetic waves, Propagation, *Ferrites, *Magnetic fields, *Resonance, Numerical analysis.

A method is proposed for the quantitative computation of the influence of inhomogeneities of the demagnetizing fields on the shape of the resonance curves. An approximate computation is made for a definite experimental apparatus. Examples are presented when the inhomogeneity of the demagnetization has a significant influence on resonance curves of ferromagnets. (Author)

Kirenskii, L. V., Buravikhin, V. A. and others.
DOMAIN STRUCTURE OF THE FERROMAGNETIC FILMS [Domennaya Struktura Tonkikh Ferromagnitnykh Plenok]. [1962] [23]p. 20 refs.
Order from OTS or SLA $2.60 62-10642

Trans. of [Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya] 1961, no. 5 [p. 3-9].

DESCRIPTORS: *Ferromagnetic materials, *Films, Thin films, Ferromagnetism, Theory, Memory devices, Computers, Control systems, Vacuum systems, Evaporation, Magnetic fields.

The influences are examined of the technique of obtaining the film, and of the thickness of the films on the configuration of their domain structure in an alloy composed of 80% Ni, 17% Fe, and 3% Mo. The changes in the domain structure of films from this alloy were studied, as well as those of an alloy composed of 50% Ni and 50% Fe, in a magnetic field.

Levitskii, S. M. and Gvozdetskii, V. S.
THE EFFECT OF A CONSTANT ELECTRICAL FIELD UPON THE STRIKING OF AN SHF PULSE DISCHARGE IN A GAS. 29 Mar 62 [15]p. 12 refs. FTD-TT-62-417.
Order from OTS or SLA $1.60 62-24476

Unedited rough draft trans. of #Radiotekhnika i Elektronika (USSR) 1962, v. 7, no. 1, p. 133-141.

DESCRIPTORS: Air, Argon, *Gases, Superhigh frequency, Frequency, *Electric discharges, *Electric fields, Electrical effects, Voltage, Pressure.

An experimental study is made of the effect of a constant electrical field upon the striking and burning of an SHF pulse discharge in air and argon at a frequency of 10,000 Mc. It is shown that under certain conditions the superimposition of an electrical field increases the breakdown power of the discharge and decreases the share of pulses leading to breakdown of the SHF channel. (Author)

Rabl, Helmuth.
FERRITE TRANSFLUXORS: MATERIALS, DESIGN, CONSTRUCTION, AND OPERATION (Ferrit-Transfluxoren: Aufbau, Wirkungsweise, Konstruktionsbedingungen und Werkstoffe). [1962] [23]p. (foreign text included) 5 refs.
Order from SLA $2.60 62-16020

Trans. of Siemens Zeitschrift (West Germany) 1960, v. 34, no. 6, p. 385-390.

DESCRIPTORS: *Ferrite cores, Materials, Design, Construction, Operation, *Magnetic materials, Magnetic cores.

Zerbini, Valentino.
HYSTERESIGRAPHS. [1962] [26]p. 30 refs.
Order from SLA $2.60 62-14684

Trans. of Elettrotecnica (Italy) 1945, v. 32, p. 182-193.

DESCRIPTORS: *Hysteresis, Magnetism, Electrical equipment.

Molecular Physics and Spectroscopy

Bryukhanov, A. S., Golub', V. N., and Chekanov, A. G.
A MASS-SPECTROMETER. 14 May 62 [7]p.
FTD-TT-62-369.
Order from OTS or SLA $1.10 62-25549

Unedited rough draft trans. of Soviet patent 139478 (686462/23) 24 Nov 60.

DESCRIPTORS: *Mass spectrometers, Gases, Mixtures, Ion sources, Ion beams, Ions, Motion, Mirrors, Reflection.

This mass-spectrometer with resolution according to the flight time of ions generated by a pulsed source, has the following special feature: in order to increase its resolution, electrostatic mirrors are mounted in the drift space; these repeatedly reflect the ion beam. (Author)

Mangini, A[ngelo] ed.
ADVANCES IN MOLECULAR SPECTROSCOPY, VOLS. 1-3. 1962, 700p.
Order from PP $45.00/3 vol. set

Trans. of mono. International Meeting on Molecular Spectroscopy (no. 4) Bologna. Proceedings.

DESCRIPTORS: *Molecular spectroscopy, *Ultraviolet spectroscopy, *Infrared spectroscopy, *Raman spectroscopy, *Microwave spectroscopy, *Molecular rotation, Nuclear resonance, Crystals, Ions, Molecular structure, Chemical bonds, Lead compounds, Tellurides, Methanes, Halides, Deuterium, Proteins.

Nikitin, V. N. and Volchek, B. Z.
THE STUDY OF POLYMERS BY MEANS OF INFRARED SPECTROSCOPY. [1962] 10p.
Order from ATS $15.45 ATS-73P60R

Trans. #Zavodskaya Lab[oratoriya] (USSR) 1962, v. 28, no. 1, p. 49-55.

DESCRIPTORS: *Polymers, *Infrared spectroscopy.

Paksy, L.
A NEW QUANTITATIVE METHOD OF EVALUATING SPECTRAL ANALYSIS: THE INTERMEDIATE STANDARD METHOD. June 62.
Order from BISI $2 15s BISI-2741

Trans. of Acta Chim[ica] (Hungary) 1961, v. 28, no. 1/3, p. 17-27.

DESCRIPTORS: *Spectrographic analysis, Test methods.

Optics

Barabash, J.
NEW CONDENSER FOR ILLUMINATING MICROSCOPES. [1962] [6]p.
Order from OTS or SLA $1.10 62-10989

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1960, v. 5, no. 2, p. 116-119.

DESCRIPTORS: *Microscopes, Optical systems, *Polarizing filters, Illumination.

Euler, Joachim.
REFLECTION MEASUREMENTS ON SANDED ALUMINUM (Reflexionsmessungen an Gesandetem Aluminium). [1962] [25]p. (foreign text included) 10 refs.
Order from SLA $2.60 62-16030

Trans. of Z[eitschrift für] Angew[andte] Physik (West Germany) 1949, v. 1, no. 12, p. 569-573.

DESCRIPTORS: *Aluminum, Surfaces, *Reflection, Impurities, Infrared spectroscopy.

The wavelength dependency of diffusely reflecting power and the scattering indicatrix is investigated for sanded aluminum surfaces under various conditions of incidence and reflection. The effects of grain size, various contaminations, and mechanical lesions are given. (Author)

Fragstein, C. v.
ON THE FORMULATION OF KIRCHHOFF'S LAW AND ITS USE FOR A SUITABLE DEFINITION OF DIFFUSE REFLECTION FACTORS (Über die Formulierung des Kirchhoffschen Gesetzes und Ihre Bedeutung für eine Zweckmässige Definition von Remissionszahlen). [1962] [24]p. (foreign text included) 5 refs.
Order from SLA $2.60 62-16028

Trans. of Optik (West Germany) 1955, v. 12, no. 2, p. 60-70.

DESCRIPTORS: *Optics, Theory, Diffusion, Reflection, Absorption, *Blackbody radiation, Light, Mathematical analysis.

Kirchhoff's law can be stated either for a small solid angle $d\Omega$ or for a halfspace (hemisphere). Each case requires a separate exact definition of the constants necessary for the characterization of emission, absorption and diffuse reflection. Kirchhoff's law is directly related to the reciprocity theorem of optics through a mutual dependence. If interchange of light source and receiver is carried out correctly, reciprocity is satisfied for the partial diffuse reflection constants as well. (Author)

Kard, P. G.
ANALYTICAL THEORY OF OPTICAL PROPERTIES OF MULTILAYER DIELECTRIC COATINGS. [1962] 10p. [refs. omitted].
Order from OTS or SLA $1.10 62-10971

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 2, no. 2, p. 236-244.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 59-20506 [1959] 15p.

DESCRIPTORS: *Coatings, *Dielectric films, *Optics, Light, Reflection, Penetration, Transmission, Theory.

For abstract see Technical Translations 2: 895, 1959.

Kard, P. G.
THEORY OF MULTILAYER COATINGS ON LENSES FOR INCREASING THE TRANSMITTANCE OF LIGHT [1962] 12p. 1 ref.
Order from OTS or SLA $1.60 62-10986

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 2, no. 2, p. 245-253.

DESCRIPTORS: *Coatings, *Dielectric films, *Optics, Light transmission, Reflection, Penetration, *Lenses.

The previous theory (Optika i Spektroskopiya 2: 236-244, 1957; available in translation from OTS or SLA $1.10 as 62-10971) is used for calculating multilayer coatings for increasing the light transmittance of a lens. New simple formulas are derived and a graph is suggested. An optimum composition for 2-, 3-, and 4-layer coatings, which promote light transmittance over the entire visible region, is found. Further possibilities for using the theory are discussed briefly. (Author)

SWELLING OF URANIUM. Quarterly rept. no. 1. Dec 60, 43p. 65 refs. Supersedes TID-12466.
Order from OTS or SLA $4.60 62-32015

Trans. of rept. from Centre d'Etude de l'Energie Nucléaire (Belgium).

DESCRIPTORS: *Uranium, *Crystal structure, *Dislocations, Atomic number, Bubbles, Growth, Heat treatment, Metals, Rare gases, Fission products, Deformation, Reduction, Platinum, Niobium, Zirconium, Electron microscopy.

Studies are to be made on (1) the dislocation configuration of uranium and other metals of high atomic number and different crystallographic structure, (2) the nature of the nucleation sites of the bubbles, (3) the mechanism of growth of the bubbles, (4) the growth kinetics of the bubbles, (5) the influence of thermal cycling, and (6) the effect of pre-irradiation heat treatment. Rare gases will be introduced into the metals by bombardment with fission fragments. Experiments were initiated on the preparation of very thin foils (200- to 1000-A thick) of platinum, niobium, zirconium and uranium for electron transmission microscopy. The preparation included (1) rolling to 10- or 20-micron thickness and beating to 0.1-micron thickness, (2) recrystallization in air and/or vacuum to reduce the deformation, (3) controlled pretreatment such as irradiation and/or quenching and annealing, (4) final thinning to the 200- to 1000-A region, and (5) observation in the electron microscope. Platinum had a pronounced ability to polygonize during annealing after quenching: it is very suitable for dislocation studies. No suitable method was found for electropolishing of zirconium: foils were either too thick for transmission studies or were covered with an oxide film.

Chormonov, T. Kh.
INFLUENCE OF ULTRASOUND ON CERTAIN PHYSICAL PROPERTIES OF FERROELECTRIC SALT CRYSTALS. [1961] 4p. MDF C-125 [AFCRL-93] AD-255 677.
Order from OTS $0.50 62-11428

Trans. of #A[kademiya] N[auk] SSSR. Izv[estiya]. Ser[iya] Fiz[icheskaya] 1960, v. 24, no. 11, p. 1347-1349.

DESCRIPTORS: Physical properties, Magnetostriction, Dielectric properties, *Ferroelectric crystals, X-ray diffraction analysis, Ions, Motion *Crystallization, Crystal structure, *Utrasonics, Intensity.

A 21.5 kc ultrasound at a 2 w/sq cm specific power accelerated the ion mobility during crystal crystallization. As the intensity of the ultrasound increased, the homogeneity of the ferroelectric salt crystals worsened. Under the effect of ultrasound, the structure of a ferroelectric salt crystal becomes fine-grained and the crystal is strengthened. The degree of strengthening of the ferroelectric salt crystals depends on the intensity and duration of the effect of the ultrasound. The

dielectric losses of ferroelectric salt crystals under the effect of ultrasound diminish significantly in comparison with the dielectric losses of conventional ferroelectric salts. Crushing of the domain structure of the ferroelectric salt crystals probably occurs, thus leading to a diminution in their dielectric permeability and dielectric losses. Ultrasound causes a finer crystal structure, consequently, noticeable increase in the diffusion width of the interference lines with large angles of slide occurs.

Evers, M.
THE YIELD POINT SINGLE CRYSTALS OF α-IRON. Apr 62.
Order from BISI £4 5s BISI-2503.

Trans. of Zeitschrift für Metallkunde (West Germany) 1961, v. 52 [no. 5] p. 359-364.

DESCRIPTORS: *Iron, *Single crystals, Stresses.

Ferry, Michel, Aubrion, Gabrielle, and Margerie, Jean-Claude.
MECHANISM OF SOLIDIFICATION AND SEGREGATION IN PHOSPHORUS PIG IRON (Mecanisme de Solidification et Ségrégations dans les Fontes Phosphoreuses). [1962] [53]p. (foreign text included) 24 refs.
Order from SLA $5.60 62-14906

Trans. of Fonderie (France) 1955, no. 109, p. 4353-4372.

DESCRIPTORS: *Cast iron, Phosphorus, Solids, Liquids, Diffusion, Crystals, Chemical equilibrium, Phase transitions.

Gahm, J.
INTERGROWTHS OF MAGNESIUM FERRITE AND PERICLASE. [1962].
Order from BISI £4 BISI-2540

Trans. of Tonindustrie-Z[eitung] (West Germany) 1960, v. 84, p. 215-219.

DESCRIPTORS: *Magnesium compounds, *Ferrites, Oxides, *Crystals, Metallic crystals.

Horak, J., Machovec, M., and Kosek, F.
ZINC TELLURIDE: A SEMICONDUCTING COMPOUND. [1960] [17]p. (2 figs. omitted) 18 refs.
Order from OTS or SLA $1.60 60-15997

Trans. of [Chekhoslovatskii Fizicheskii Zhurnal] 1957, v. 7, no. 4, p. 468-475.

DESCRIPTORS: *Zinc compounds, *Tellurides, *Semiconductors, Temperature, Conductivity, Intermetallic compounds, Crystals, Lattices.

Zinc telluride was synthetized in quartz from very pure samples of zinc and tellurium. The Debye-Scherrer method was used to revise the tabulated values of the lattice constant for which the value of 6.085 Å was found by extrapolation of the back reflection method. The conductivity of zinc telluride as a function of the temperature was measured on evaporated thin films. The structure of the films does not differ from the structure of the bulk material. The films were evaporated in a vacuum of the order of 10^{-6} mm Hg on copper contacts. The copper was electrolytically deposited on silver burnt onto coated porcelain; the current voltage dependence on the contacts Cu-ZnTe-Cu was purely ohmic. The conductivity of the heated specimens was much higher during the first measurement than during the following. It was decreased by heating the specimens. The samples were heated for five hours at 120° C in a paraffin oil bath during which the conductivity approached a certain limiting value. The value of the conductivity was measured in the range 0 to 140° C. and the value of the activation energy 0.25 eV was calculated. The activation energy calculated from the course of the "maiden curves" are somewhat higher. The thermal emf were found on the samples (obtained by pressing zinc telluride powder with a pressure of about 30,000 kg/cm^2 and sintering at a temperature of 1200° C. for six hours) by means of rod-like copper electrodes which were pressed against the sample being measured. The point contacts were heated by heating elements. The specimens exhibit a p-type conductivity. (Author)

Kienow, S.
ORIENTATED INTERGROWTHS OF SPINELS RICH IN IRON OXIDE WITH MULLITE. [1962].
Order from BISI 5 15s BISI-2539

Trans. of Tonindustrie-Z[eitung] (West Germany) 1959, v. 83, p. 275-281.

DESCRIPTORS: *Crystals, Metallic crystals, *Spinels, *Iron compounds, Oxides, *Mullite.

Krause, Alfons and Wolski, Wlodzimierz.
THE PREPARATION OF FERROMAGNETIC FERRITES BY THERMAL TREATMENT OF SUITABLE SALTS (O Otrzymywaniu Ferromagnetycznych Zelazinow Przez Termiczna Obrobke Odpowiednich Soli). 1959 [3]p. 5 refs. NRL Trans. 712.
Order from OTS or SLA $1.10 59-11920

Trans. of Roczniki Chemii (Poland) 1957, v. 31, p. 327-328.

DESCRIPTORS: *Ferrites, Production, Oxides, Phase transitions, Chemical reactions.

For abstract see Technical Translations 2: 532, 1959.

Krause, Alfons and Wolski, Wlodzimierz.
A SIMPLE NEW METHOD FOR OBTAINING FERROMAGNETIC FERRITES (O Nowej Prostej Metodzie Otrzymywania Ferromagnetycznysh Zelazinow). 1959 [4]p. 17 refs. NRL Trans. 710.
Order from OTS or SLA $1.10 59-11922

Trans. of Roczniki Chemii (Poland) 1957, v. 31, p. 319-321.

DESCRIPTORS: *Ferrites, Production, Hydroxides, Dehydration, Transformations, Chemical reactions.

For abstract see Technical Translations 2: 458, 1959.

Maksimyuk, P. A.
RELAXATION PHENOMENA IN METALS AND ALLOYS: AN INVESTIGATION OF INTERNAL GRAIN BOUNDARY FRICTION MAXIMUM IN ALUMINUM-COPPER-NICKEL ALLOYS. [Transactions of an Inter-Collegiate Conference]. [1962] 4p.
Order from ATS $6.25 ATS-55P61R

Trans. of mono. Relaksatsionnye Yavleniya v Metallakh i Splavakh (Trudy Mezhvuz[ovskogo]. Soveshchaniya) Moscow, 1960, p. 289-294.

DESCRIPTORS: *Metals, Alloys, *Relaxation time, *Nickel alloys, *Copper alloys, *Aluminum alloys, Grains (Metallurgy), *Internal friction.

Müller, K. Alexander.
PARAMAGNETIC RESONANCE OF Fe^{3+} IN SINGLE CRYSTALS OF $SrTiO_3$. [1962] 52p. 58 refs.
Order from SLA $5.60 62-16102

Trans. of Helvetica Physica Acta (Switzerland) 1958, v. 31 [no. 3] p. 173-204.

DESCRIPTORS: *Strontium compounds, *Titanates, *Single crystals, Crystals, Iron, Ions, *Paramagnetic resonance, Resonance.

Myasnikov, I. A.
SURFACE PROCESSES ON ZnO AND ITS ELECTRICAL CONDUCTIVITY IN A HYDROGEN ATMOSPHERE. [1960] [8p] 11 refs.
Order from OTS or SLA $1.10 62-14033

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1958, v. 32, no. 4, p. 841-847.
Another trans. is available from ATS $10.65 as ATS-77N48R [1960] 8p.

DESCRIPTORS: *Zinc compounds, *Oxides, Electrical properties, Electrical conductance, Measurement.

Quantitative correlations were established between the chemisorption of hydrogen on zinc oxide and the electrical conductivity of the latter. A mechanism is proposed to explain the increase in the electrical conductivity of ZnO in the presence of hydrogen. In accordance with the proposed mechanism, the change in the concentration of the quasi-free electrons in the semiconductor when hydrogen is present is not directly related to the chemisorption of the latter, which proceeds at low temperatures without change in the electrical conductivity, but instead it is associated with the secondary processes: dissociation into atoms and subsequent ionization of the chemisorbed hydrogen with the formation of chemisorbed hydrogen ions and conduction electrons. It is postulated that the chemisorption of hydrogen on electronic semiconductors of the ZnO type, not associated with a change in the electrical conductivity, takes place on the positive ions of the lattice with the formation of donor-acceptor bonds. The effect of impurities on the chemisorption of hydrogen by electronic semiconductors may be linked with a shift in the equilibrium of the reaction: $(H_2)_g \rightleftarrows (H_2)_a \rightleftarrows (H_2^+)_a + e$

in one direction or the other, depending on the donor or acceptor character of the impurities.

Piontelli, R., Bertocci, U. and others.
RESEARCH ON THE ELECTROCHEMICAL BEHAVIOR OF METALLIC SINGLE CRYSTALS, NOTES 1-3 (Ricerche sul Comportamento Elettrochimico dei Monocristalli Metallici). [1959] 59p. 10 refs.
Order from OTS or SLA $5.60 AEC-tr-3583

Trans. of Istituto Lombardo di Sci[enze e Lettere], Rend[iconti] (Italy) 1957, v. 91, p. 347-370 and 378-385.

DESCRIPTORS: *Metallic crystals, *Single crystals, *Electrochemistry, Electrodes, Copper, Silver, Zinc.

A complete experimental technique was developed for (1) the preparation of single crystals of purest metals, (2) their elaboration in the form of disks with oriented and suitably prepared surfaces, and (3) the measurement of the overvoltages which correspond to the functioning of the samples themselves as electrodes in appropriate measuring cells. Anodic and cathodic overvoltages of Cu and Ag single crystal electrodes (active surface oriented following (111) and (100) were investigated at 25°C with different solutions and current densities. The structural changes involved were studied by electron diffraction and by micrography. The hydrogen overvoltages in H_2SO_4 0.1 M, at 25°, 40°, and 55°C on electrodes of Cu single crystals in the shape of disks whose active surface was oriented following (111), (110), (100), and on Cu polycrystalline electrodes were investigated. Tafel's law holds true. The parameters are coincident for all of the investigated electrodes.

Shubnikov, A. V., ed.
GROWTH OF CRYSTALS, VOL. III. May 62, approx. 380p.
Order from CB $25.00

Trans. of Russian mono. [Rost Kristallov] v. 3, n.p., n.d.

DESCRIPTORS: *Crystals, *Minerals, Growth.

Shubnikov, A. V.
SCHOOLS OF X-RAY STRUCTURAL ANALYSIS IN THE SOVIET UNION [AND] AUTOBIOGRAPHICAL DATA AND PERSONAL REMINISCENCES. [1962] [20]p.
Order from OTS or SLA $1.60 62-14810

Trans. of monos. (papers) presented at the 50th Anniversary of the Discovery of X-ray Diffraction, n.p., 1961.

DESCRIPTORS: *Solid state physics, Crystals, *X-ray diffraction analysis, Universities, Training, Personnel

Sibille, R.
FERRITE MATERIALS OF VERY LOW TEMPERATURE COEFFICIENT FOR HIGH FREQUENCIES. [1962] 6p. (5 figs. 1 table omitted).
Order from SLA $1.10 62-16186

Trans. of l'Onde Électrique (France) 1960 [v. 40, no. 402] p. 586-589.

DESCRIPTORS: *Ferrites, *Magnetic materials, Magnetic cores, Low temperature research, High frequency, Miniature electronic equipment, Stability.

Suchet, J. P.
ATOMIC RADII, ELECTRONEGATIVITIES AND ENERGY GAPS IN INORGANIC SEMICONDUCTOR COMPOUNDS. [1962] 16p. (13 figs. 10 tables omitted) 26 refs.
Order from SLA $1.60 62-16207

Trans. of Phys[ics and] Chem[istry of] Solids (U. S.) [1960] v. 16 [no. 3/4] p. 265-278.
Another trans. is available from SLA $2.60 as 62-14461 [1962] [22]p.

DESCRIPTORS: *Inorganic substances, *Semiconductors, Electrons, Energy, Solid state physics.

Suchet, J. P.
IONOCITIES, EFFECTIVE CHARGES AND ELECTRONIC MOBILITIES IN SEMICONDUCTING INORGANIC COMPOUNDS. [1962] 21p. (7 figs. 8 tables omitted) 39 refs.
Order from SLA $2.60 62-16206

Trans. of Phys[ics and] Chem[istry of] Solids (U. S.) [1961] v. 21, no. 3/4, p. 156-171.

DESCRIPTORS: *Inorganic substances, *Semiconductors, Ions, Electrons, Motions, Electron transitions, Solid state physics.

Suchet, J. P.
RULES FOR PREDICTING SEMICONDUCTIVITY IN INORGANIC CRYSTALLINE LATTICES. [1962] [21]p. (2 figs. 6 tables omitted) 89 refs.
Order from SLA $2.60 62-16203

Trans. of Phys[ics and] Chem[istry of] Solids (U. S.) 1959, v. 12 [no. 1] p. 74-88.

DESCRIPTORS: *Inorganic substances, Crystals, Lattices, *Semiconductors, Solid state physics.

Tauc, Jan.
PHOTO AND THERMOELECTRIC EFFECTS IN SEMICONDUCTORS. International Series of Monographs on Semiconductors, vol. 2. [1962] 216p.
Order from PP $10.00

Trans. of unidentified Czechoslovakian mono., n. p., 1958.

DESCRIPTORS: *Semiconductors, Photoelectric effect, *Thermoelectricity, Magnetic effects.

Born, Max.
COSMIC VOYAGES AND THE CLOCK PARADOX. Dec 59, 7p. 3 refs. MDF B-144; AFCRL-TN-60-118.
Order from OTS $0.50 62-11332

Trans. of Phys[ikalische] Bl[ätter] (West Germany) 1958, v. 14, p. 207-212

DESCRIPTORS: *Space flight, *Relativity theory, Time, *Time lag theory, Gravity, Inertia, Velocity, Acceleration.

The time-development theory is analyzed which states that when cosmic flights at velocities near the speed of light become possible (perhaps by using photon recoil) then any point of the cosmos can be reached in the normal lifetime of men on board the spacecraft, although when they return to earth they may find future generations. It is shown that according to the special theory of relativity the total time of motion over a closed system is less than the time measured by an observer at rest. Thus the voyager appears to be younger, upon returning, than is the stay-at-home. Within the framework of the general theory of relativity, when the voyager is considered to be at rest and the stay-at-home as moving, then the metric tensor must be defined by the gravitational field that occurs because of the noninertial system of measurement. Quantitative estimates of the difference in the behavior of a clock in a constant gravitational field from that of a clock in an inertial system with relative velocity much less than the speed of light show, according to the graphic reasoning of Einstein, that the intrinsic speed of the moving clock will be less than that of the stationary clock. An examination of the paper by H. Bondi (Discovery 18: 505, 1957) shows that this effect can also be explained in a simpler manner (i.e., by the Doppler effect). (See also PB 137 457)

Fradkin, E. S.
ON RENORMALIZATION IN QUANTUM ELECTRODYNAMICS. [1962] [5]p. 3 refs.
Order from OTS or SLA $1.10 62-10647

Trans. of Z[hurnal] E[ksperimental'noi i] T[eoreticheskoi] F[iziki] (USSR) 1954, v. 26, no. 6, p. 751-754.

DESCRIPTORS: *Electrons, *Photons, *Perturbation theory, *Green's function, Integrals, Operators (Mathematics), Differential equations.

The equations for the Green's function are formulated so that they contain only renormalized quantities expressed in terms of experimental values of the charge and mass of the electron. The renormalization is carried out in very general form in order that the results may be carried over to mesodynamics without difficulty.

Ivanenko, D. D., Kompaneets, A. S. and others.
DO GRAVITATIONAL WAVES EXIST? 14 Feb 62, 2p.
AID rept. 62-24.
Order from OTS or SLA $1.10 62-23701

Abstract trans. of Znanie-Sila (USSR) 1961, v. 36, no. 12, p. 6-[10]

DESCRIPTORS: *Gravity, Detection, Measurement, Magnetic fields, Light.

The views of four top Soviet theoretical physicists on practicable methods of detecting and measuring gravitational waves are summarized.

Komarov, N. N. and Fadiev, V. M.
PLASMA DANS UN CHAMP MAGNETIQUE SELF-CONSISTANT (Plazma v Samosoglasovannom Magnitnom Pole) tr. by Fedorovsky. 26 Dec 61 [15]p. (Russian text included) 5 refs. CEA Trans. no. R 1460 (text in French).
Order from OTS or SLA $1.60 62-24576

Trans. in French of #Zh[urnal] Eksper[imentalnoi i] Teor[eticheskoi] Fiz[iki] (USSR) 1961, v. 41, no. 2, p. 528-533.

DESCRIPTORS: *Plasma physics, *Magnetic fields, Particles, Distribution, Temperature, Functions, Partial differential equations, Integrals.

En négligeant les chocs entre les particules, on a défini l'état stationnaire d'un plasma à plusieurs constituants, à symétrie axiale dans un champ magnétique axial extérieur en présence d'un courant azimutal du plasma, compte tenu du champ magnétique propre du plasma. On a admis une distribution maxwellienne des vitesses avec des températures longitudinales et transversales différentes, ainsi que la neutralité du plasma en chaque point. (Author)

Komarov, N. N., Bol'shov, V. G. and others.
A STUDY OF THE STEADY STATES OF A PLASMA IN A KINETIC APPROXIMATION [AND] THE ANODES OF THERMIONIC CONVERTERS.
14 May 62 [23]p. 9 refs. FTD-TT-62-413.
Order from OTS $0.75 62-11709

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1962, v. 32, no. 2, p. 133-138 and 214-219.

DESCRIPTORS: *Plasma physics, Kinetic theory, Density, Particles, Distribution, Cylindrical bodies, Statistical functions, Magnetic fields, Numerical analysis, Partial differential equations, *Thermionic converters, *Anodes, Work functions, Electron beams, Space charges, Electric potential, Refractory materials, Cathodes, Cesium, Vapor pressure, *Thermionic emission.

In the first paper (by N. N. Komarov and V. M. Fadayev) the steady state of a k-component fully ionized collisionless plasma with cylindrical symmetry is examined by using a kinetic equation. The particle-distribution function is examined with respect to the coordinates and the velocities $F_k(r, v)$ and the configuration of the magnetic field $H_\phi(r)$ under the assumption that an external current flows along the axis of symmetry and that drift is superimposed on the chaotic motion of each component with a temperature in the direction of the z axis. The temperatures and the velocities are assumed to be independent of the radius. In the second paper (by V. G. Bol'shov and A. A. Zharinov) experiments are described in which work functions of 3.7 to 4.4 ev were obtained for the layers formed by the vaporization products of certain refractory compounds (ZrC, TaC, and UC + ZrC), intended for use as cathodes of converters, in cesium vapors.

Morozov, A. I.
ACCELERATION OF PLASMA BY A MAGNETIC FIELD. Oct 57, 7p. 11 refs.
Order from OTS or SLA $1.10 62-14081

Trans. of #Zhur[nal] Eksp[erimental'noi] i Teoret-[icheskoi] Fiz[iki] (USSR) 1957, v. 32, no. 2, p. 305-310.

DESCRIPTORS: *Plasma physics, Acceleration, Magnetic fields, Ions, Electrons, Motion, *Plasma jets.

The acceleration of a current-conducting plasma stream [jet] by a magnetic field is studied. The nature of the processes is elucidated preliminarily by considering the case of the motion of conductors possessing some resistance and inductance. In addition, the motion of ions and electrons is studied under conditions where the collisions and magnetic interaction of the particles and the excitation of the waves may be neglected. The existence of a critical particle density in the accelerator has been established for this case. The peculiarities of the acceleration of very dense streams [jets] are also considered. (Author)

Thermodynamics

Chechetkin, A. V.
HIGH TEMPERATURE HEAT CARRIERS. 1962, 320p.
Order from PP $10.00

Trans. of mono. [Vysokotemperaturnye Teplonositeli, Moscow, 1957, 167p.].

DESCRIPTORS: *Heat transfer, *Heat exchange, Boiling, Condensation, *Aerodynamics, Gases, *Hydrodynamics, Liquids, Water, Mineral Oils, Liquid metals, Fused materials.

Euler, J. and Schneider, W.
ON THE MEASURING ACCURACY IN FILAMENT PYROMETERS. [1962] 23p. (7 figs. omitted) 1 ref.
Order from SLA $2.60 62-14282

Trans. of Zeitschr[ift] f[ür] Angew[andte] Physik (West Germany) 1951, v. 3, no. 12, p. 459-467.

DESCRIPTORS: Filaments, *Pyrometers, Measurement, Errors, Optics, Visual thresholds.

Zabrodskii, S. S.
THE PROBLEM OF HEAT EXCHANGE IN A FLUIDIZED BED (K Voprosu o Teploobmnene v Psevdoozhizhennom (Kipyashchem) Sloe) tr. by M. Slade. [1962] [10]p. (foreign text included) 5 refs. [CSIRO] Trans. 5582.
Order from OTS or SLA $1.10 62-23717

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1960, v. 3, no. 2, p. 111-114.

DESCRIPTORS: *Fluidized solids, *Heat transfer, Thermal conductivity, Liquids, Gases, Particles, Motion.

Recent observations of Bondareva and Todes (Inzhenerno-Fizicheskii Zhurnal 3: no. 2, 105-110, 1960; available in translation from OTS or SLA $1.60 as 62-13608) do not contradict the notion of the "gas" model, nor are they arguments in favor of the "liquid" model which they defended.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

DIGEST OF TRANSLATED RUSSIAN LITERATURE. May 62 [18]p. 134 refs.
Order from ARS in Its Journal, v. 32, no. 5, $3.00

Trans. of abstracts from eleven selected Russian periodicals.

DESCRIPTORS: *Translations, USSR, Abstracting, Geophysics, Physics, Physical chemistry, Chemistry, Metallurgy, Radio equipment, Electrical engineering, Astronomy, Acoustics, Solid state physics, Communications theory.

NEW SCIENTIFIC COORDINATING COUNCILS IN THE UKRAINIAN ACADEMY OF SCIENCES. 8 June 62 [14]p. JPRS: 14046.
Order from OTS or SLA $1.60 62-25058

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1962, no. 1, p. 131-133.

DESCRIPTORS: *Scientific organizations, Scientific research, *Research program administration.

NEWS OF THE SIBERIAN DIVISION OF THE ACADEMY OF SCIENCES USSR, 1961, NO. 6: [SELECTED] TRANSLATIONS. 24 Apr 62 [12]p. JPRS: 13608.
Order from OTS or SLA $1.60 62-24257

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 6, p. 130-135.

DESCRIPTORS: Siberia, *Transportation, *Salts, Deposits, Conferences, *Soils, Scientific personnel, *Hydrodynamics.

Contents:
Scientific report on the development of transportation in Irkutskaya Oblast, by A. Vorob'ev
Work on the salt commission, by A. S. Kolosov
Siberian Conference of Soil Scientists (no. 1) by N. V. Orlovskii

At the Joint Scientific Council on Physicomathematical and Technical Sciences, by A. K. Chernenko.

NEWS ON SOVIET SCIENCE. 30 Mar 62 [39]p. JPRS: 13329.
Order from OTS or SLA $3.60 62-23800

Trans. of Kholodil'naya Tekhnika (USSR) 1961 [v. 38] no. 4, p. 66-68 and from Nedelya (USSR) 1961, no. 20, p. 10-11; 1962, no. 1, p. 10; Izvestiya (USSR) 1961, 116(13662) p. 4; no. 118(13664) p. 4; Pravda, Moscow (USSR) 1961, no. 204(15694) (2 articles); no. 276(15766) p. 4; Pravda Vostoka (USSR) 1961, no. 271(11549) p. 4; Sovetskaya Moldaviya (USSR) 1961, 20 Sep, p. 2.

DESCRIPTORS: *Science, Measurement, Instrumentation, Photosynthesis, Scientific research, Materials, Fast neutrons, Neutron capture, Bioelectronics, Refrigeration systems, Public health, Universities, Medical equipment.

Contents:
The role of precision equipment in natural science, by A. Berg and V. Arutyunov
The problem of photosynthesis, by A. Shakhov
Life-protecting instruments
Use of new materials in science, by A. Samarin
News from the academies
Remarkable measuring instruments, by L. Shuvatov
Harnessing fast neutrons, by Il'ya Frank
The thirteenth anniversary of the Leningrad Technological Institute of the Refrigeration Industry
Medical services in the Moldavian SSR, by V. Malygina
Uzbek Institute of Public Health and History of Medicine.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 99733, 99737-99741, 99743, 99747-99753. 11 June 62, 14 nos.
Order from AC $1.85/each

DESCRIPTORS: *Patents, *Inventions, *Norway, Bacteriostatic substances, Nitrogen compounds, Furan derivatives, Liquids, Storage tanks, Carbon dioxide, Pumps, Bread, Cutting tools, Elevators, Materials, Phenolic resins, Resins, Agricultural machines, Detents, Milking machines, Machines, Valves, Motion picutres, Processing, Passenger vehicles, Safety belts, Tractors, Lifeboats, Ship hulls, Design.

Contents:
99733 Method for manufacture of new bacteriostatically acting nitrofuran compounds; 99737 Storage tank for cold liquids; 99738 Device for pumping liquid carbon dioxide; 99739 Bread cutting machine (removing sliced

bread in one operation, etc.); 99740 Frame for door opening in elevator shaft; 99741 Method for manufacture of phenol resins; 99743 Locking device on hay rakes; 99747 Valve device for connection of branching-off on a main pipe (espec. for milking machine system); 99748 Mixing valve with thermic equalization (for taps, mixing batteries, delivery at desired temperature, etc.); 99749 Method for manufacture of text on cinematographic films; 99750 Device in safety belts for cars, etc., for checking (braking) the movements of the carriers at accidents and before the stretching ability of the belt, etc. has been utilized; 99751 Driving band device for tractors; 99752 Device for release of a load, particularly a life boat (central release under full load); 99753 Device in ship's hull for utilization of heeling and pitching movements for propulsion of ships, and damping of these movements.

NORWEGIAN PATENTS IN ENGLISH TRANSLATION, NOS. 99754-99757, 99759-99760, 99766, 99768, 99774-99775, 99778, 99780, 99786-99787, 99792. [11 [11 June 62] 15 nos.
Order from AC $1.85/each

DESCRIPTORS: *Patents, *Inventions, *Norway, Gun mounts, Carbon, Coal, Materials, Expanded glass, Thermal insulation, Packaging, Washing machines, Newspapers, Processing, Machines, Current limiters, Transistors, Furniture, Air, Humidity, Nickel, Oxides, Optical equipment, Radiation effects, Countermeasures, Zinc, Zinc alloys, Alloys, Surfaces, Electrolytic polishing, Meat, Preservation, Mining, Engineering, Explosives.

Contents:
99754 Device in gun mounting (particularly for recoil free canons); 99755 Method for manufacture of formed carboniferous objects at pressure baking (burning); 99756 Method for manufacture of heat insulating plates of foam glass; 99757 Packing casing (for flowers, etc.) with internal gas pressure (air cushion protecting the packed body); 99759 Device in cleaning and washing machines for textile products; 99760 Machine for automatic counting and stapling of printed matters, as f. ex. newspapers, etc.; 99766 Current limiting device for Ward leonard circuits; 99768 Thermically conducting holder for a transistor; 99774 Sofa convertible into a bed; 99775 Device for humidification of air; 99778 Method for refining oxide of nickel material (selective removal of undesired components: copper, lead, etc.); 99780 Optical apparatus for observation of the interior of closed rooms for protection against effects of ionizing radiation and harmful dust; 99786 Method for anodic electro-polishing of objects with surface of zinc or zinc alloys; 99787 Method for salting (curing) fresh meat products; 99792 Device in rocket driven 'mining snake' (= hose filled with explosives laid across mined area causing latter to explode)

NOTES ON VARIOUS ASPECTS OF THE ACADEMY OF SCIENCES USSR. 13 Feb 62 [11]p. 1 ref.
JPRS: 12538.
Order from OTS or SLA $1.60 62-19151

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 9, p. 107, 113-114 and no. 10, p. 122-123.

DESCRIPTORS: *Scientific organizations, *Scientific personnel.

Contents:
News of activities of the Academy of Sciences USSR
Celebrations and awards
Organization of observatories and institutes, Presentation of awards.

RECENT SCIENTIFIC CONFERENCES IN THE SOVIET UNION. 7 May 62 [67]p. JPRS: 13670.
Order from OTS or SLA $6.60 62-24393

Trans. of Vodosnabzhenie i Sanitarnaya Tekhnika (USSR) 1961, no. 10, p. 37-40; Akademiya Nauk SSSR. Vestnik, 1961, v. 31, no. 12, p. 106-109; #Atomnaya Energiya (USSR) 1961, v. 11, no. 3, p. 261 and 268-269; ##Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 9, p. 128-130; #Zhurnal Fizicheskoi Khimii (USSR) [1961] v. 35, no. 9, p. 2170-2172; Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961, v. 6, no. 5, p. 572-580. ##Another trans. is available from OTS or SLA $1.10 as 62-15451; JPRS-12033, 19 Jan 62 [10]p.

DESCRIPTORS: Conferences, *Water supplies, Sewage, Automation, Remote control systems, Construction, *Water, Urban areas, Sedimentation, Purification, *Scientific organizations, Siberia, *Scientific personnel, *Blast furnaces, Radioactive isotopes, *Nuclear physics, Scientific research, Adsorption, Chromatographic analysis, *Chemistry, Plants, Growth, Animal industry, *Chemical industry, Toxicity.

Contents:
Conference on Automation and Remote Control of Water Supply and Sewer Systems and Constructions, Moscow, 14-16 June 61
Conference on the Use of Flocculants with High Molecular Weight for Purefying Drinking Water, 30-31 May 61
New Scientific Center in Siberia
Awarding of the prize imeni A. E. Fersman for 1961
Celebration honoring Academician I. M. Vinogradov
Celebration honoring Academian P. S. Novikov
Seminar on the Utilization of Isotopes and Nuclear Radiation in Blast Furnace Operations, Dneprodzerzhinsk, Mar 61, by P. L. Gruzin
Session of the Academic Council of the United Institute of Nuclear Research (no. 10) Dubna, 24-27 May, by V. Biryukov
Conference devoted to the memory of G. Yu. Vereshchagin, 24-26 May 61, by O. M. Kozhova and V. I. Man'kovskii
Scientific Conference of ONII (Obshchestvennyi Nauchno-Issledovatel'skii Institut Communal Scientific Research Institute) (no. 1) Gorno-Altaysk, 1-4 July 61, by V. S. Belousova
Ukrainian Republician Conference on Adsorption and Methods of Chromatographic Analysis, by K. V. Chmutov
Plenary meeting of the central executive board of the All-Union Chemical Society imeni D. I. Mendeleev (no. 5) by D. L. Margolin
Conference on the Subject of the Toxicology of Compounds with High Molecular Weight and Chemical Raw Materials Used for their Synthesis, 1961, by B. Yu. Kalinin..

RECENT SOVIET SCIENTIFIC CONFERENCES.
25 May 62 [37]p. JPRS: 13886.
Order from OTS or SLA $3.60 62-24984

Trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata]. Vestnik, 1961 [v. 17] no. 4(193) p. 3-7; Geokhimiya (USSR) 1961, no. 6, p. 538; #Kauchuk i Rezina (USSR) 1961 [v. 20] no. 9, p. 57-58; Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 5, p. 139; Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1961, no. 9, p. 1719-1720; Gazovaya Promyshlennost' (USSR) 1961 [v. 6] no. 4, p. 55-56; no. 8, p. 54; #Zavodskaya Laboratoriya (USSR) 1961, v. 27, no. 8, p. 1046-1048; Sudostroenie (USSR) 1961 [v. 27] no. 9, p. 76-77; and from Zarya Vostoka (USSR) 1961, 4 Dec, p. 1

DESCRIPTORS: *Science, *Conferences, Chemical engineering, Oils, Tires, Minerals, Power, Engineering, Industry, Chemical elements, Organic compounds, Chemical analysis, *Plastics, Test methods, Test equipment, Ships, Construction.

Contents:
Scholars of the Academy of Sciences Kazakh SSR hail the 22nd Party Congress
Scientific reading in memory of V. I. Vernadskii, by A. S. Pavlemko
All-Union Seminar of oil chemistry workers on the Study of Work Experience of the Public Institute of Worker-Researchers of the Omsk tire plant, by K. A. Naidin
Conference of young specialists of the Scientific Research Institute of the Tire Industry [1961] by L. A. Smirnova
Methodical seminar on Power Engineering Technology (no. 3) Minsk, 1961, by Yu. V. Varankin
The Scientific-Technical Society of the Power Engineering Industry, by M. A. Nechaev
Conference on the Building of the Periodic System of Mendeleev, by A. V. Lapitskii
All-Union Scientific Technical Conference of Planning Engineers and Builders, Minsk, by E. Bolmalina
Conference on Machines and Methods of Mechanical Testing of Plastics, Moscow, Feb 61, by V. S. Strelaev
Activity of the Scientific-Technical Society of the Shipbuilding Industry, by V. P. Belkin
Completion of scientific forum.

SOVIET SCIENTIFIC ORGANIZATION AND POLICY.
20 June 62 [41]p. 2 refs. JPRS: 14253.
Order from OTS or SLA $4.60 62-25498

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 2, p. 3-8, 29-34; Akademiya Nauk Kazakh-[skoi] SSR, Alma-Ata. Vestnik, 1962 [v. 18] no. 2(203) p. 3-9; and from Pravda, Moscow (USSR) 1962, 28 Apr, p. 2.

DESCRIPTORS: *Scientific organizations, Leadership, Scientific research, *Research program administration, Communism, Science.

Contents:
Specific leadership for scientific institutions, by G. Popov
Scientific councils; a new form of scientific administration
Technical progress and tasks of scientific information, by A. I. Mikhailov
Role of science in building the material-technical basis of communism, by A. B. Reznyakov.

SOVIET SCIENTIFIC ORGANIZATION AND POLICY: RECENT ARTICLES. 20 June 62 [28]p. JPRS: 14240.
Order from OTS or SLA $2.60 62-25488

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1961, no. 12, p. 80-83; and from Zarya Vostoka (USSR) 1961, no. 269(11292) p. 3; no. 274(11297) p. 1; Pravda, Moscow (USSR) 1961, no. 247(12687) p. 3-4; no. 291(12731) p. 1.

DESCRIPTORS: *Scientific organizations, Science, Communism, *Scientific research, Research program administration.

Contents:
Science and life
Scientific prospects, by E. K. Fedorov
On the frontiers of science
Participation of Georgian science in creation of the material-technical basis of Communism, by E. Andronikashvili
Present status and future prospects for growth of the scientific activity of affiliates and institutes of the Academy of Sciences USSR transferred to the State Committee for Coordination of Scientific Research of the Council of Ministers RSFSR, by V. O. Ruzhitskii.

Berg, A. I., ed.
CYBERNETICS AT THE SERVICE OF COMMUNISM.
25 July 62 [459]p. 207 refs. JPRS: 14592.
Order from OTS or SLA $23.50 62-32062

Trans. of mono. Kibernetiku na Sluzhbu Kommunizmu, v. 1, Moscow/Leningrad, 1961, 312p.

DESCRIPTORS: *Cybernetics, *Communism, Statistical processes, *Information theory, Data processing systems, Data storage systems, Data transmission systems, Data, Sampling, Collecting methods, Industrial production, Communication systems, Communications theory, Biology, Physiology, Neurology, Brain, Man, Automatic, Control systems, Economics, Language, Political science, Meteorology, Chemistry, Telephone communication systems, Electrical equipment, Transportation, Control, Digital computers, Computers

Contents:
From the editor
Cybernetics at the service of communism, by A. I. Berg
Some methodological problems of cybernetics, by I. B. Novik
Some problems of cybernetics and statistics, by B. V. Gnedenko
Problems of the information theory, by R. L. Dobrushin and Ya. I. Khurgin (material partially borrowed from mono. Teoriya Optimal'nogo Codirovaniya Informatsii, by L. E. Filippova and B. S. Tsybakov)

Sampling, initial processing, storage and transformation of information about the course of production processes, by K. B. Arutyunov and D. V. Svecharnik
Problems of communications and cybernetics, by K. Ya. Sergeichuk
Cybernetic problems in the biological sciences, II. Cybernetics and living nature, by A. D. Voskresenskii and A. I. Prokhorov
Problems of cybernetics in medicine; study of the physiological functions, by A. D. Voskresenskii and A. I. Prokhorov
Neurocybernetics, by S. N. Braines
Study of the principles of information processing by the brain, by A. B. Napalkov
Man in automatic control systems, by D. Yu. Panov and D. A. Oshanin
Cybernetics and economics. III. Cybernetics and the humanitarian sciences, by V. D. Belkin
Cybernetics and control of the national economy, by A. I. Kitov
Linguistic problems of cybernetics and structural linguistics, by V. V. Ivanov and S. K. Shaumyan
Possibilities of using cybernetics technique in the solution of certain problems of law, by N. D. Andreev and D. A. Kerimov
Cybernetics in meteorology. IV. Cybernetics in science and engineering, by S. A. Mashkovich
Cybernetics and chemistry, by G. E. Vleduts
Teleautomatics and cybernetics, by V. A. Il'in
The use of cybernetics in electrical systems, by V. A. Venikov
Cybernetic transportation problems, by Ya. Aksenov.

Mamedaliev, Yu.
THE GREAT DEBT OF SCIENCE. 24 May 62 [12]p. JPRS: 13876.
Order from OTS or SLA $1.60 62-24989

Trans. from Bakinskii Rabochii (USSR) 1961, 12 Oct, p. 2.

DESCRIPTOFS: Scientific research, *Industrial research, Chemistry, Metallurgy, Geology, Physics, Biology, Agriculture.

Tondl, Ladislav.
CZECHOSLOVAK DISCUSSION OF ROLE OF CYBERNETICS IN COMMUNIST SOCIETY (Poslanie Kybernetiky v Komunistickej Spolocnosti). 7 Aug 61 [13]p. JPRS: 9761.
Order from OTS or SLA $1.60 62-19691

Trans. of Kulturny Zivot (Czechoslovakia) 1961, no. 19 p. 14.

DESCRIPTORS: *Cybernetics, Control, Control systems, Man, Communications theory, Machines, Labor, Sociology, Industry, Automation.

HERALD OF COMMUNICATIONS, 1961 [VOL. 21] NO. 12[261]. 1 May 62 [137]p. JPRS: 13628.
Order from OTS or SLA $10.50 62-24388

Trans. of Vestnik Svyazi (USSR) 1961 [v. 21] no. 12[261] including covers.

DESCRIPTORS: *Communication systems, Thyratrons, Rectifiers, Communication equipment, Telegraph systems, Radio communication systems, Postal systems, Personnel, Economics, Radio broadcasting, Television communication systems, Telephone communication systems, Economics, Electronic equipment.

Contents:
A meeting of the activists among the communications workers of the capital
The Communist education of the communicators, a most important task
Phasing grid-controlled thyratron rectifiers, by I. M. Sheinkar
Circuits and design of V-60-S equipment, by N. E. Popova and I. P. Petrushin
Protecting trunk cables from dangerous voltages, by M. I, Mikhailov and L. D. Razumov
Modernization of the type UNP-2 psophometer, by G. V. Dem'yanchenko
We must put our internal resources into effect in order to improve service to the public
A unique aerial-cable crossing, by I. V. Andreev and I. V. Bazhenov
The experience of leading workers, by A. F. Aleksandrov
We must improve telegraph communications, by Kh. I. Myand
We must expand and modernize communications facilities in the Turkmen and republic, by A. I. Gusev
Leaders in the Socialist competition
From experience in operating equipment in radio-rebroadcast centers, by L. I. Shteinbuk and I. G. Derbakov
Filling S-1-S-5 station storage batteries with transformer oil, by A. S. Danilkin
Operating alkaline counter-EMF cells, by B. A. Piontkovskii
New uniform wage scales for rank-and-file skilled communications workers, by S. I. Mitina and A. M. Savvine
Advanced methods used in the maintenance of wired radio-broadcast loudspeakers, by A. I. Kochergin
The communications division of Moscow State University, by N. K. Shaka
Nonstate financing at a radio center, by V. D. Galevskii
Development of communications facilities in the Hungarian Peoples Republic, by I. Koshsha
From the Svyaz'izdat Plan for 1962
An automatic electrical postal cancellation machine, by I. Ya. Abramovich
A new procedure for reimbursing travel expenses of communications workers.

HERALD OF COMMUNICATIONS, 1962 [VOL. 22] NO. 2[263]. 25 May 62 [180]p. JPRS: 13870.
Order from OTS or SLA $12.50 62-24977

Trans. of Vestnik Svyazi (USSR) 1962 [v. 22]no. 2[263] including covers.

DESCRIPTORS: *Communication systems, Communication equipment, Telephone communication systems, Telegraph systems, Radio broadcasting, Postal systems, Television communication systems, Radio communication systems, Coaxial cables, Radio stations, Voltage regulators, Rural areas, Personnel, Electronic equipment.

Contents:
Soviet people should be provided with an excellent service of all communication facilities (editorial)
Small-sized coaxial cables, by P. A. Frolov
An improvement of the control-circuit arrangement of a UKV ChM [Ultra-short-wave FM] radio station, by I. S. Dumer
Noncontact automatic audio-frequency-voltage regulator on the input of level comparator, by B. S. Mints
Passive distributors for group telephone communication, by Ya. Yu. Ginzburg
A simplified high-frequency channel for the trunk lines of the VRS [intra-rayon communication service] by B. Ya. Gertsenshtein
Every complaint is a signal of the shortcomings in the work of communication organizations, by V. S. Savanchuk
Automatic system of direct connections and of the teletypewriter exhcange service [TWX] in Lithuania, by A. A. Vaisa
Shortcomings in the service to the population should be persistently eliminated, by E. S. Medvedev
Labor deeds of the communication workers of East Kazakhstan, by A. M. Bykov
Experience of the operation of house ATS on Leningrad city telephone exchange, by M. A. Martynov
Organization of the base stations [relay boxes] in the delivery districts of the mail carriers in rural areas, by A. T. Zhigakov
From the experience of a television repair shop, by N. I. Babkin
Improvement of the methods of the calculation of postal-service output volume, by L. P. Dedyukova
A good service to the population, by S. G. Volkov and L. Ya. Yakovlev
Soviet Union has ratified the International Electrocommunication Convention, by Z. I. Nikiforova

HERALD OF COMMUNICATIONS, 1962 [VOL. 22] NO. 3[264]. 28 May 62 [162]p. JPRS: 13894.
Order from OTS or SLA $12.00 62-24991

Trans. of Vestnik Svyazi (USSR) 1962 [v. 22] no. 3[264] including covers.

DESCRIPTORS: *Communication systems, Telephone communication systems, Television communication systems, Television stations, Television transmitters, Distortion, Television receivers, Communication equipment, Telegraph systems, Rural areas, Personnel, Training, Postal systems, Communications theory, Economics, Electronic equipment.

Contents:
Complaints, their causes and measures of prevention
New systems for the paired connection of telephones, by L. S. Farafonov
Transmitting stations and television relay stations for two-program television, by I. I. Govalio
Methods for the measurement of start-stop distortions, by K. P. Lishai
The effect of ground currents on the cable communication lines and measures for their protection, by G. G. Ogul'chanskii
The apparatus PNP-1 for tuning the high-frequency units of the television receivers, by G. V. Babuk and G. M. Finogeev
The cost of the output is the most important index of the plan of the self-supporting communication enterprises, by O. S. Srapionov
The telephone service in rural areas should be improved in a radical manner, by A. F. Vorontsov
We will translate the resolutions of the Party Congress into reality, by F. T. Mazhaev
To the population, -- A good long distance telephone service, by K. N. Kytina
For the communications enterprises of Kirgiz SSR -- trained personnel, by M. V. Ryzhov
A progressive mail transport office, by L. E. Yakovlev
"09", by N. V. Zakharova
The scouts of the future
Competition has become an effective force, by M. K. Vsevolodov
The diary of the communication workers' competition
A necessary and useful book for the communication workers of popular professions, by I. V. Bulygin
Literature for communication workers, by B. A. Voronov.

HERALD OF COMMUNICATIONS, 1962 [VOL. 22] NO. 4[265]. 11 June 62 [166]p. JPRS: 14076.
Order from OTS or SLA $12.00 62-25170

Trans. of Vestnik Svyazi (USSR) 1962 [v. 22] no. 4[265] including covers.

DESCRIPTORS: *Communication systems, Communication equipment, Personnel, Telephone communication systems, Automation, Radio communication systems, Radio broadcasting, Radio stations, Postal systems, Rural areas, Telegraph systems, Television communication systems, Electronic equipment.

Contents:
A radical improvement in the quality of the work is the most important task of soviet communication workers
For the automation and overall mechanization of the long distance telephone service, by I. P. Petrushin
The modernized long distance semiautomatic-service equipment AMSO-60-U for intra-oblast' exchanges, by L. A. Berezovich
Passive relay stations on radio-relay links, by A. I. Miroshin
Automated diesel-generator sets E-3R and E-7R for rediffusion stations, by P. A. Sul'G
Videotelephone, by V. A. Savanchuk and K. A. Alekseev
The quality and efficiency of the service to the population have to be improved
Communication workers' conference by correspondence

Technical equipment of the mail-transport enterprises of the Moscow center, by G. G. Shakh-Nazarov
Inter-rayon inspectors help to improve communication service in rural areas, by B. G. Varshavskii
The manufacture of reinforced-concrete booths for pay telephones, by E. P. Dubrovskii
The population is satisfied with the performance of communication workers, by L. Ya. Yakovlev
The collective of Sverdlovsk telegraph office in the drive for Communist labor, by A. G. Vasilevskii
New rates of the depreciation deductions and the characteristics of their application at the communications enterprises, by M. M. Glushko and P. M. Rubina
Telephone service in Il'ich' [Lenin's] study, by Ya. V. Basaev
A distributing conveyer for the mail-exchange section, by Yu. N. Komarov

Kharkevich, Aleksander Aleksandrovich.
OUTLINE OF GENERAL COMMUNICATION THEORY CONTENTS, FOREWORD, INTRODUCTION. [1961] 6p. MDF K-112.
Order from OTS or SLA $1.10 62-23165

Trans. from mono. [Ocherki Obshchei Teorii Svyazi] Moscow, 1955.
A complete trans. is available from OTS or SLA $21.00 as 61-23668 [1961] [375]p.

DESCRIPTORS: *Communications theory, Information theory.

Kubin, Boris.
CZECHOSLOVAK REPORT ON ROLE OF ANALOG COMPUTERS IN COMMUNICATIONS (Analogove Pocitaci Stroje s Umelym Sdelovacim Provozem). 7 Aug 61 [26]p. JPRS: 9747.
Order from OTS or SLA $2.60 62-19689

Trans. of Ceskoslovenske Spoje, 1961, v. 6, no. 4, p. 3-7.

DESCRIPTORS: *Communication systems, Telegraph systems, Telephone communication systems, *Analog computers, Computers, Operation, Electronic circuits, Circuits, Transistors, Relays, *Czechoslovakia.

Photographic Equipment

PHOTOGRAPHY AND CINEMATOGRAPHY IN THE USSR AND SATELLITES. 16 May 62 [14]p. 1 ref. JPRS: 13812.
Order from OTS or SLA $1.60 62-24717

Trans. of #Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1962, v. 7, no. 1, p. 76-80.

DESCRIPTORS: *Engineering, *Photography, *Motion picture photography, Personnel, Training, Conferences, Hungary.

Contents:
Photographic education in colleges and universities. IV. Organization of training of specialists in engineering photography in the Leningrad Institute of Motion Picture Engineers, by Yu. N. Gorokhovskii
Hungarian Conference on Scientific and Applied Photography (no. 3) Budapest, 28 Aug-1 Sep 61, by V. I. Uspenskii and others.

Mink, Henri de.
MICROSHEET: A NEW PROCEDURE IN MICROPHOTOGRAPHY (Mikrobladet - on Ny Möjlighet vid Mikrofotografering). [1958] [12]p. (foreign text included) 10 refs.
Order from SLA $1.60 62-14078

Trans. of Tidskrift för Dokumentation (Sweden) 1956, v. 12, no. 6, p. 69-72.

DESCRIPTORS: *Microphotography, *Microfilm, *Microfilm readers, Photographic equipment, Documentation.

SOCIAL SCIENCES

ANALYSIS OF THE SOVIET UNION'S MILITARY BUDGET. [1962] [15]p. (foreign text included).
Order from SLA $1.60 62-16096

Trans. of Tairiku [Mondai] (Japan) 1952, v. 1, no. 3, p. 37-42.

DESCRIPTORS: *Military budgets, USSR, Analysis.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING, NO. 22. 31 Jan 61 [36]p. JPRS: 6680.
Original copy poor quality; available on loan from OTS or SLA 62-19222

Trans. of Muszaki Konyvtarosok Tajekoztatoja (Hungary) 1960, no. 5, p. 1-20 and Ipargazdasag (Hungary) 1960 [v. 12] no. 10, p. 18-20.

DESCRIPTORS: *Documentation, *Scientific information centers, Libraries, Scientific organizations, Propaganda, Personnel.

Contents:
Technical information bureaus in the Soviet Union, by Bela Zentai
Organization of technical information in the Soviet Union
A few comments on Bela Zentai's article, by Lajos Kanszky.

Butinov, N. A.
PROBLEMS IN THE HISTORY OF PRIMITIVE SOCIETY (Problemy Istorii Pervobytnogo Obshchestva). 1962, 56p. 165 refs. PL-480 Smi.
Order from OTS $0.50 61-31222

Trans. of Akademiya Nauk SSSR. Institut Etnografii. Trudy [1960] v. 54.

DESCRIPTORS: *Labor, *Economics, *Food, Man, Culture, Anthropological data, Australia, Pacific Islands.

We have characterized the various elements of division of labor in the Australian, Papuan-Melanesian and Polynesian tribes. We have shown in what manner the division of labor determines the various aspects of the social life of these peoples. The division of labor among the Australian tribes brought about their nomadic way of life, the custom of mutual visiting among the local groups, the separation of men from women, the subdivision of local groups into family groups, the initiation rites, and the totemism. The Papuan-Melanesian tribes provided an example of the effect of the division of labor on the form of settlement, on the nature of the tribal organization, on the kinship system, and on the marriage form. And finally, the Polynesians have shown how, under the conditions of the first appearance of the social division of labor, the concepts of private property, wealth differentiation, and social classes arose. The division of labor is not only strongly affected by the natural qualities of the people themselves (in division of labor according to sex and age), but also by the natural properties of the labor objects (in organization of labor) and of the geographic medium in general (in the specialization of communities and the economic cycle). The division of labor reflects reasonably correctly, the level of historical development attained by a people. (Author)

Eisman, A. A., Malyshev, Yu. A., and Nikolaichik, V. M.
ELECTRONICS IN CRIMINOLOGY. 28 May 62 [64]p. JPRS: 13944.
Order from OTS or SLA $6.60 62-25013

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DESCRIPTORS: Varnishes, Paints, Coatings, *Chemical industry, *Labor unions.

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